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## WASHINGTON'S MUNICIPAL MARKETS



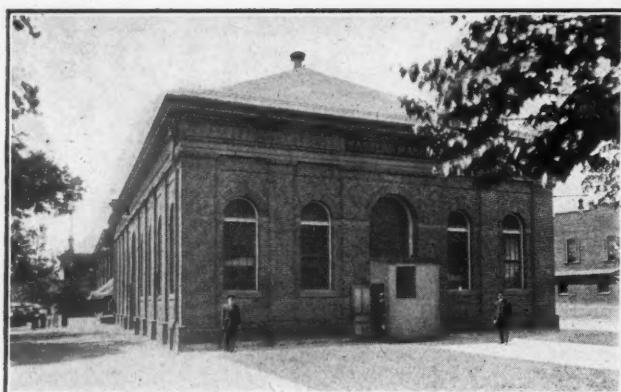
FARMERS' PRODUCE MARKET, WASHINGTON; LOOKING TOWARD WASHINGTON MONUMENT

UNDER the charge and maintenance of the Commissioners of the District of Columbia are a large outdoor market and a market building; the former, known as the Farmers' Produce Market, being assigned as a place where farmers may sell the produce of their own raising; and the building, known as the Eastern market, being occupied largely by those selling meat and fish, and dealing in groceries. They are under the direct supervision of Mr. W. C. Haskell, Superintendent of Weights, Measures and Markets of the District.

The farmers' market, which is in the downtown section of the city, is a large open space occupying two blocks, from Tenth to Twelfth streets and from B to Little B streets. This is furnished with brick walks running the entire length

of the area, against which farmers back their teams or in some cases erect stands under canvas shelters. The general nature of this market and of the material sold there is well illustrated by the two photographs shown herewith. Permits for space of eight feet are issued and a fee of 10 cts. per day per wagon is charged to cover the cost of taking care of the space so occupied. During the busy season as many as five hundred teams are accommodated on this space daily.

The Eastern market is a brick and stone building whose general outside dimensions are 108 ft. by 53 ft.; to which has been added recently a fish market 21 ft. by 42 ft. outside dimensions, the entrance to which is at the southwest corner of the main building. The floors of the market are of concrete



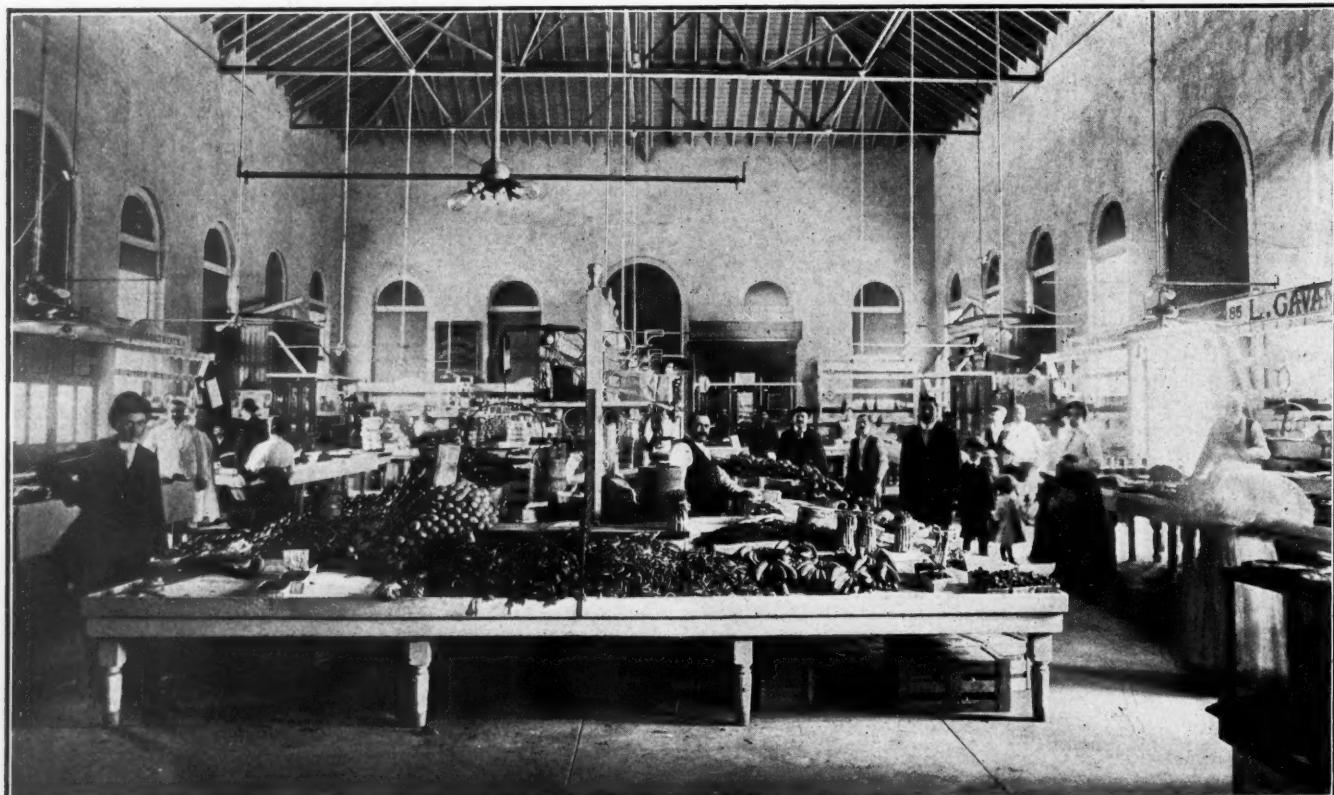
NORTH EXTERIOR VIEW, EASTERN MARKET

and the entire building is well drained to the sewers. In the fish market all tables and other furnishings are raised well above the floor, and in the old market all old benches and backs are being replaced with tables so as to permit a thorough flushing of the market and prevent the storage under them of unsightly articles and meat or produce likely to decay, as was usual with the old closed counter benches. There is no wainscoting or similar wall covering in any part of the market, as this offers a harbor for rats and other vermin. The fish room, while connected with the main market, has no direct entrance therefrom, which prevents the odors from the fish market permeating the main market. As the former has been constructed within the last two years it represents fairly well the ideas of the Commissioners as to what a modern market should be, and a description of some of the details may be of interest.

The room is thoroughly ventilated and all doors, windows and other openings are provided with screens to keep out flies and other insects. The whole market is well lighted, there being light green shades at the windows to reduce the glare. The ceilings are 24 ft. high, which gives good ventilation. Meat and fish benches are arranged around the sides of the market, each provided with a modern ice cooler. Vegetable benches, with permanent trays for display, are located in the

center. Everything is painted white, except the tops of the benches. The floor is of concrete, consisting of a 4-inch base of 1 cement, 2 sand and 4 gravel, and a 1-inch top of 1 cement and 2 sand troweled smooth and divided off into blocks; the cement work being guaranteed for five years. There are set into the concrete floors pin plates of galvanized iron, these being so located that a pin on each leg of each stand will set into a socket, thus holding the stand firmly in position. There are four floor drains in the main market and one in the fish market, each drain being provided with a trap. There are five sinks in the fish and flower stalls, which discharge into the drains; also one in the kitchen.

Each meat stall is provided with a meat table and a meat rack. Each of these is supported on legs turned out of 4 by 4 Georgia pine, the top of the table standing 3 feet above the floor. The legs are connected at the bottom by cross braces of 2 by 3 oak and at the top by side or apron pieces of 1 $\frac{3}{4}$  by 5 $\frac{3}{4}$  oak. The tops of the tables are of white oak, those of the outside tables being 2 $\frac{1}{2}$  inches thick and the narrower ones against the walls being 1 $\frac{1}{2}$  inches thick. These tables are made up of pieces 6 inches wide, with V-shaped tongue and groove, the several pieces being tied together by rods set not more than 2 feet apart and provided with nuts and washers;  $\frac{5}{8}$ -inch rods being used on the thicker tables and  $\frac{1}{2}$ -inch rods on the thinner. The heads of the rods are countersunk and the openings filled with oak pins. The corners of the table tops are all rounded. Each of the inner or wall stalls is provided with two drawers. Shelves for fish are of 1 $\frac{1}{2}$ -inch material, 1 ft. 4 inches wide, the whole being covered with 14-ounce zinc carried up over a beveled edging strip  $\frac{1}{2}$ -inch thick to prevent water from dripping off; the water being drained from the bench by 1-inch lead pipe in the center, toward which the zinc surface pitches  $\frac{1}{4}$  inch in 12 inches. On the bottom of each leg is screwed a  $\frac{7}{8}$ -inch galvanized pin which fits into a 1-inch floor socket. Each table leg is secured to the top by 4 x 4 x 1 $\frac{1}{2}$  x  $\frac{1}{4}$ -inch steel knees. The inside meat tables, or those next to the walls, carry racks which consist of two posts, each provided with three cast-iron brackets, the top of the highest bracket being 7 feet above the floor. Each bracket has a recess in its top edge in which rests a hanging bar, the recess being  $\frac{1}{8}$  inch wider than the bar. These bars are 2 $\frac{3}{4}$



NEW ADDITION TO EASTERN MARKET; 300 x 50 FEET



## FARMERS' PRODUCE MARKET

1. District of Columbia Building  
2. Willard Hotel

3. Post Building  
4. Munsey Building

6. U. S. Post Office  
7. Star Building

inches wide by  $3\frac{3}{4}$  high for the top bar, 2 inches wide by 3 inches high for the middle bar and  $1\frac{3}{4}$  inches wide by  $2\frac{1}{4}$  high for the bottom bar. The center of the top hanging bar sets out 9 inches from the vertical post to which the bracket is attached, the middle bar is  $6\frac{1}{2}$  inches and the bottom bar  $4\frac{1}{2}$  inches from the post. Each hanging bar is provided with 10 galvanized iron meat hooks. The posts carrying the brackets and hanging bars are anchored to the wall at the top by a  $\frac{3}{4}$ -inch expansion bolt fastened into the wall.

## SANITARY CONVENiences IN VIENNA

THE following information concerning public-convenience stations in Vienna is furnished by Vice-Consul-General R. W. Heingartner:

The number of public sanitaries or convenience stations in Vienna is 77, of which 74 are above ground, containing 564 water closets, of which 136 first-class and 148 second-class are for women, and 136 first-class and 144 second-class for men. Besides these 77 stations, there are 128 urinal stations for men, built at a cost of \$121 each.

The privilege of erecting all conveniences was granted to a single firm in 1883, the contract running to January 1, 1940, and their building, management and maintenance are carried on by the firm, in return for which it can prohibit the erection of stations by others within 1,666 feet of any of its own stations. The firm charges 2 cents for the use of a first-class closet, with washstand, and  $1\frac{1}{2}$  cents for a second-class closet,

without washstand. The city pays it a yearly subvention of \$16 for each urinal in these stations.

The cost of building an over-ground station averages \$3,200, and of an underground station \$16,000. The cost of management and maintenance of an over-ground station is about \$600 per annum, and of an underground station double that amount.

## BATTLE CREEK WATER WORKS

THE Superintendent of the Battle Creek, Mich., water works, Mr. W. W. Brigden, has presented a synopsis of the finances and operation of the plant for 1909 in an unusually condensed form. The department pays all operating expenses, interest and new construction out of net earnings, and has in addition accumulated a sinking fund of \$29,600, but \$400 less than the total bonded indebtedness. The city does not, we understand, pay for fire protection or water used, the value of these services for last year being estimated at \$28,240, and the actual water consumed for public purposes at 25 per cent of the total pumping. Including the proper charge for public services, and deducting interest at 4 per cent on the total cost (\$463,437) and 4 per cent depreciation, a net gain of \$27,093 is shown for 1909. Meter rates are 6 to 13 cents per 1,000 gallons. Ninety-four per cent of the services are metered, meters being sold at cost or rented at 10 per cent of cost, or 10 cts. per month for  $\frac{1}{2}$  inch. Last year there was added to the pumping plant a three-million-gallon pump—the first addition to the pumping plant in over twenty-one years.

## RAPID SEWAGE SEDIMENTATION

Abstract of Experimental Investigations on the Sedimentation  
of Sewage at Cologne, Germany, Made by  
City Engineer Steuernagel

By Emil Kulchling, C.E.

A NUMBER of years ago the city of Cologne was directed by the State authorities to purify its sewage thoroughly before discharging it into the Rhine. The purification was to be carried to such a degree as to involve the removal of all suspended matters and practically all micro-organisms, not more than 300 bacteria or germs per cubic centimeter to remain in the effluent. As sewage farming and biological treatment were impracticable owing to local considerations, this requirement left open only the chemical and mechanical methods of purification, both of which entailed many difficulties as well as high costs.

The municipal authorities demurred strongly against the official decree, as it seemed to them that the sewage might safely be discharged without extensive purification into the river, whose minimum flow was 27,650 cu. ft. per second, since there were no communities on the banks of the stream for many miles below the city, and nowhere was the water used for domestic purposes. Exhaustive studies of the character of the stream and its pollution were undertaken, and in 1893 the results were submitted to the State authorities with the request that the purification be limited to only a mechanical removal of the suspended matters in the sewage. This request was granted in 1894 on the following conditions:—

1. The sewage was to be allowed to settle in suitable tanks in which the velocity of flow should not exceed 4 mm. per second.
2. The entire discharge must be passed through screens to arrest all floating matter.
3. The sludge or sediment must be stored in impermeable basins and disinfected, in order to prevent the contamination of the ground water.

Plans were then prepared for the settling tanks, and on further study of the problem it was considered that a velocity of 15 mm. per second through the same would suffice to arrest all but the finest matter, and that very little more would be gained by the prescribed speed of 4 mm., while the size of the plant and the operating expenses would be nearly quadrupled. It was also pointed out that this very finely divided organic matter would quickly disappear in the stream by oxidation, and furthermore that the sludge or sediment resulting from so small a velocity as 4 mm. would contain much more water than when the velocity was considerably increased. The more water contained in the sludge the more difficult its satisfactory treatment becomes, and therefore it would be preferable in all respects to increase the velocity through the tanks to at least 15 mm.

In view of the absence of definite information about the efficiency of sedimentation at different rates of passage through large tanks, it was finally agreed in 1897 that the city should make a series of experiments with a tank of full size, and thus determine the most desirable velocity. After various delays the necessary experimental works were completed in the summer of 1900.

OLD DETRITUS TANK AND SCREENS.—Several years prior to 1900, the main outlet sewer of the city was provided with a small detritus tank and screen to arrest the coarsest matter of the sewage. The population was then about 330,000 and the estimated volume of sewage was 13,300,000 gals. per day, or 20.6 cu. ft. per sec. The sewer has an oval cross-section 9.5 ft. high and of the same width, and a grade of 1 in 3000. The detritus pit is only 11.2 ft. long, 6.2 ft. wide and 6.6 ft. deep, formed by depressing the invert. It was designed for arresting only sand, stones and other heavy matter. The screens consist of two gratings formed of bars spaced 0.28 in. apart in the clear, the first one dipping from 5 to 7 inches into the sewage to arrest floating objects, while the second covers the entire cross-section of the sewer. Both screens are kept clear by suitable rakes, and the detritus pit is cleaned out periodically with dredging shovels.

This part of the plant was intended only for temporary use, and was to be entirely remodeled after a thorough knowledge of the character of the matter arrested thereby had been gained. It is located at a point a few hundred feet above the experimental settling tank, and has served to exclude much offensive matter from the river. From numerous hourly observations made during 1901, when the average discharge of sewage was 14,530,000 U. S. gals per day, it was found that the sand-pit and screens yielded a daily average of about 170 cubic feet of wet but well-drained suspended matter, or 11.7 cu. ft. per million gallons.

The matter thus arrested was divided into three general classes, viz.: heavy solids, suspended matter and floating substances, the volumes of each class being respectively 13.69 and 18 per cent. of the total. A smaller number of closer separations resulted as follows:—total daily quantity 167.1 cu. ft., of which 20.9 cu. ft. was heavy solids, 116.5 cu. ft. was suspended matter, and 29.7 cu. ft. was floating substance. Of the first class 9.2 cu. ft. consisted of sand, ash and coffee grounds; 5.6 cu. ft. stones, fruit-pits and grain seeds; 2.5 cu. ft. bones and wood; 1.4 cu. ft. heavy rags; 1.0 cu. ft. fruit and kitchen offal; 0.9 cu. ft. wool, hair, cotton, etc.; 0.3 cu. ft. meat and entrails. Of the second class, 98.4 cu. ft. was paper; 7.4 cu. ft. rags; 5.3 cu. ft. wool, hair, cotton, etc.; 5.0 cu. ft. fruit and kitchen offal; and 0.4 cu. ft. meat and entrails. The third class consisted almost wholly of floating fecal matter. It will be noticed that of all this material only 36.4 cu. ft., or 21.8 per cent., is readily putrescible, the remainder being virtually stable in composition.

CHARACTER OF SEWAGE.—Many analyses of the sewage of Cologne were made since 1890 by various chemists, and all of them indicate that it is comparatively weak. The quantity of dried suspended matter was found to be about 300 parts by weight per million, while the sewage of Cassel contained 8545 parts, Paris 1515, Frankfurt 1300, Berlin 1085, London 614, Danzig 600, Halle 594, Dortmund 430, and Breslau 405. According to the numerous careful analyses made during 1901 and 1902, the sewage exhibited the following characteristics after the aforesaid screening:—

I.	Total matter in solution, in parts per million.....	Average = 911
Mineral	" " " " "	" = 666
Organic	" " " " "	" = 246
II.	Total matter in suspension, in parts per million.....	" = 332
Mineral	" " " " "	" = 99
Organic	" " " " "	" = 233

It should be noted that these figures relate to the mixtures of four or more samples taken during each day while sedimentation experiments were in progress, and thus represent the average composition of the sewage on each of those days. During the night hours the liquid was always much less impure.

**SETTLING TANK.**—The settling tank was made of concrete and is rectangular in shape, being 147.6 ft. long and 26.2 ft. wide inside, with vertical walls. Its bottom is formed like a flat gutter, with transverse slopes of 1 in 20 and a longitudinal slope of 1 in 50. Near the inlet the normal depth of the sewage is 7.87 ft., while at the outlet it is 5.12 ft., thus making the average depth 6.17 ft. At the inlet end for a length of 11.0 ft. the bottom is formed with two hopper-shaped depressions or sludge sumps, in which the normal depth of the sewage is 13.61 ft. The outlet end of the tank is closed by an overflow weir hinged at the bottom, to facilitate the removal of most of the clarified liquid without disturbing the sediment.

The sewage to supply the tank was diverted from the main outlet sewer below the aforesaid screens through a rectangular concrete channel, in which a gate was placed whereby the flow could be regulated and kept practically uniform. The bottoms of the sewer and channel were on the same level, thus insuring the delivery into the tank of liquid of the same quality in all respects as flowed in the sewer. All excess sewage escaped into the river through the continuation of the sewer, and the clarified effluent from the tank was also discharged into the latter. This arrangement of the plant is highly important and is rarely found in experimental works where the supply of sewage is obtained by pumping.

The quantity of sewage so diverted was sufficient to maintain at all times uniform mean velocities of 4, 20 and 40 millimeters (0.16, 0.79 and 1.57 inches) per second through the tank, based on the mean cross-sectional area of the liquid therein. In the first case 18 experiments were made, in the second 23, and in the third 16, their durations being 24 hours each in the first and second, and 18 hours in the third case when the night flows were not treated. The average rates of flow through the tank were respectively 1,330,700, 6,850,500 and 13,126,800 U. S. gallons per day of 24 hours, maintained as uniformly as possible and with the same depth by frequent adjustments of the gate in the inlet channel.

It should also be noted that a careful study was made of the distribution of the velocities of flow through the tank at different cross-sections by means of double floats, and it was found that by immersing a set of transverse scum-boards more or less deeply into the sewage at a section located 11 ft. below the head of the tank, a positive or forward velocity would ensue at all depths and cross-sections beyond. Above these boards numerous eddies always occurred in which only the heavier particles could settle to the bottom. By thus securing a steady motion of the sewage through nearly 93 per cent. of the entire length of the tank, it was expected that the most favorable condition for the settlement of the suspended matter would be gained.

At the end of each experiment the inflow of sewage was stopped, and the clarified liquid above the sediment gradually drawn off. The remaining watery sludge was removed by means of a pump into another smaller tank, where its volume was accurately measured and its qualities determined. During each experiment the same number of samples of tank effluent were collected, mixed and analyzed as was done for the sewage, the results being as follows for the different mean velocities of flow through the tank:—

Composition of Sewage and Tank Effluent, Mean Velocity of Flow, and Quantity of Sludge or Sediment Produced.

Mean Velocity in Tank, Inch per Sec.	Time of Passage through Tank, Min.	DISSOLVED MATTER, PARTS PER MILLION		SUSPENDED MATTER, PARTS PER MILLION		Sewage (S); Effluent	Average, Maximum, Minimum	Wet Sludge, Gallons per Million	Number of Analyses
		Total	Mineral	Organic	Total	Mineral	Organic		
0.16	187.5	872.5	642.1	230.4	288.1	78.8	209.3	S.	Aver. 4040 17
		842.0	632.6	209.4	76.0	16.4	60.6	E.	Aver. Aver.
0.16	187.5	1041.0	742.0	314.0	373.0	122.0	251.0	S.	Max. 5010 17
		1000.0	724.0	305.0	104.0	36.0	75.5	E.	Max. Max.
0.16	187.5	747.0	540.0	119.0	209.0	49.0	156.0	S.	Min. 2930 17
		718.0	546.0	98.0	52.0	2.0	39.8	E.	Min. Min.
0.79	37.5	907.7	678.9	228.8	314.0	95.0	219.0	S.	Aver. 2470 21
		893.7	673.6	220.1	93.9	25.2	68.7	E.	Aver. Aver.
0.79	37.5	1159.0	832.0	327.0	390.0	138.0	287.0	S.	Max. 2999 21
		1146.0	816.0	330.0	120.0	41.0	87.8	E.	Max. Max.
0.79	37.5	718.0	573.0	127.0	198.0	61.0	134.0	S.	Min. 1640 21
1.57	18.75	953.5	675.7	277.8	393.8	123.1	270.7	S.	Aver. 2450 16
		943.7	673.3	270.4	154.5	44.3	110.2	E.	Aver. Aver.
1.57	18.75	1130.0	778.0	353.0	570.0	308.0	319.0	S.	Max. 2950 16
		1117.0	769.0	348.0	211.0	91.0	135.0	E.	Max. Max.
1.57	18.75	813.5	570.0	128.0	287.0	74.0	213.0	S.	Min. 1860 16
		802.0	566.0	118.0	118.0	19.0	95.3	E.	Min. Min.

\* P. denotes per cent of suspended matter deposited in tank.

It should be noted that the maximum and minimum figures are here given merely to indicate the range of variation in the results of the analyses; also that said figures do not always relate to the same days or samples examined. Furthermore, most of the experiments were made on days in 1901 and 1902 when no rain fell, and the remainder when there was only slight rain during a part of the day. In 1901 experiments were made in January, May, October, November and December, while in 1902 some were made in every month except August and December. All of the experiments with the highest mean velocity were made in 1902.

The figures in the foregoing table showing the average percentage (P) of suspended matter deposited in the tank at the three mean velocities indicated are highly instructive, particularly those relating to the suspended organic matter. The latter show that on the average 71.0% of such matter was removed from the sewage during a time of sedimentation of 3 hours

7.5 minutes, while 68.6% was so removed in 37.5 minutes and 59.3% in only 18.75 minutes. It will also be noticed that in each case the percentage of suspended mineral removed was somewhat greater, as is to be expected. The astonishing feature, however, is the comparatively small difference between the percentages (P) when the mean velocity of flow through the tank is increased five and tenfold.

Steuernagel also cites three small groups of similar experiments made in 1899 at Hannover by Messrs. Bock and Schwarz with a tank 246 ft. long and 6.56 ft. deep. (See *Vierteljhrsschr. f. Gerichtl. Med.*, Vol. 21, Suppl. pp. 305-315.) The mean velocities in the tank were here 0.315, 0.591 and 0.748 inch per second; the average amounts of suspended organic matter in the sewage were respectively 261.5, 458.5 and 476.7 parts per million; and the average amounts of such matter in the tank effluent were respectively 106.0, 182.5 and 201.7 parts per million, thus showing removals by sedimentation of such suspended organic matter of respectively 59.5, 60.2 and 57.7 per cent. The time of passage through said tank was respectively 156.2, 83.3 and 65.8 minutes, and the number of experiments 6, 4 and 3. It may also be remarked that according to the foregoing figures the sewage of Hannover contains nearly 60 per cent. more suspended organic matter than that of Cologne.

In examining the sewage of Cologne it was found that the character of the liquid varied considerably at different hours of the day, and from many representative samples the average quantity of suspended organic matter was ascertained to be respectively 279 parts per million in the forenoon, 311 in the afternoon, 219 in the evening, and 56 in the night, each of these designations embracing a period of 6 consecutive hours. The corresponding analyses of the tank effluent showed the following percentages of removal of such matter by sedimentation at the said three mean velocities of 0.16, 0.79 and 1.57 inch per second:—

Forenoon effluent, 69.5, 69.2 and 60.4 per cent. respectively. Afternoon " 75.4, 70.3 " 61.0 " " Evening " 72.8, 66.9 " 52.7 " " Night " 46.8, 57.4 " — " "

As the quantity of suspended organic matter during the night hours was only about one-fifth as much as that which was carried in the sewage of the other periods, the night flow was not treated in the third series of experiments. It is also seen from the figures that the percentage of such matter removed by settling appears to vary directly with the amount thereof contained in the sewage; hence it can be inferred that at the highest velocity probably not more than 40 per cent. would be removed during the said 6 night hours. By including such a low percentage the average for the entire 24 hours will be somewhat reduced, thereby making a considerably greater difference in the efficiency of sedimentation at velocities of 0.79 and 1.57 inch per second than between that at velocities of 0.16 and 0.79 inch.

The foregoing results are of vast importance in the consideration of questions of sewage disposal, as they affect enormously the construction costs and annual operating expenses of the plants that may be required by large communities situated near to large streams.

#### ROCK ASPHALT ROAD AT BOWLING GREEN

THE Office of Public Roads, U. S. Department of Agriculture, in 1907 built an experimental road at Bowling Green, using rock asphalt as a binder and to fill in the voids of a fresh macadam surface. In a circular just issued it is stated that the road was inspected during the latter part of May, 1909. A heavy rain had been falling for some hours before the inspection was made, and there was more or less soft, sticky mud on the roads adjoining the experimental road. The surface of the rock asphalt was clean, smooth and compact, with no ruts, and had much the same appearance as a first-class asphalt city street. The thin surface course of rock asphalt has worn down in a few spots to the crushed stone, but the individual crushed stones were tightly bound together and not a single loose stone was found.

## MASSACHUSETTS STATISTICS BUREAU

### Collecting Municipal Financial Statistics—Classification of Receipts and Payments—Delay in Furnishing Data —Incompetent Accounting Officers

THE Massachusetts Legislature in 1906 made provision for the collection of statistics in the State of Massachusetts, establishing a bureau of statistics, which has now for some time been actively at work and is endeavoring to bring order out of the more or less chaotic and certainly unsatisfactory condition of municipal accounting in the cities and towns of that State. The law was based upon the theory that the needed changes in methods would, in the long run, prove most effective if all municipal officials could be brought to make them in a measure voluntarily, after they themselves had come to appreciate their importance, rather than to attempt by a radical act of legislature to force such changes prematurely upon municipalities unwilling or unable to comprehend the positive advantages of a scientific system. In "Municipal Bulletin No. 1" Mr. Chas. F. Gettemy, director of the bureau, describes the present endeavor of the bureau as follows:

#### Condensed Classification of Municipal Receipts and Payments.

RECEIPTS	REVENUE.
<b>General.</b>	
<i>I. Taxes</i>	
1. Property.	7. Libraries.
2. Poll.	8. Recreation.
3. Corporation (except street railways).	9. Unclassified.
4. Street Railway.	
5. Bank (resident).	
<i>II. Licenses and Permits</i>	
A. Licenses.	<i>II. Public Service Enterprises.</i>
1. Liquor.	1. Light, Heat, and Power.
2. All Other.	a. Electric.
B. Permits.	b. Gas.
1. Marriage.	2. Water.
2. All Other.	3. All Other.
<i>III. Fines and Forfeits</i>	
1. Court.	<i>III. Cemeteries.</i>
2. Department Penalties.	
3. Contract Violations.	<b>Municipal Indebtedness.</b>
<i>IV. Grants and Gifts</i>	
A. Grants from the State for—	1. Temporary Loans (including tax loans).
1. School Purposes.	2. Loans for General Purposes.
2. Rental and Maintenance of Armories.	3. Trust Funds used.
3. Highway Purposes.	4. Loans for Public Service Enterprises.
4. Health Purposes (inspection of animals).	5. Loans for Cemeteries.
B. Grants from the County—	6. Bonds refunded, Current Year.
1. Dog Licenses.	7. Premiums.
C. Gifts from Individuals for—	8. Unpaid Warrants or Orders of Current Year.
1. Expenses.	
2. Outlays.	
<i>V. All Other General Revenue</i>	
<b>Commercial.</b>	<b>From Sinking Funds.</b>
<i>I. Special Assessments</i>	<b>Agency, Trust, and Investment Transactions.</b>
A. To meet Expenses for—	<i>I. Agency.</i>
1. Street Sprinkling.	1. Taxes.
2. Moth Extermination.	a. State.
3. Other Purposes.	b. Non-resident bank.
B. To meet Outlays for—	c. County.
1. Sewers.	2. Liquor Licenses collected for the State.
2. Sidewalks and Curbing.	3. Reimbursements for Abolition of Grade Crossings.
3. Street and All Other Betterments (not included in 1 and 2).	4. All Other.
<i>II. Privileges</i>	<i>II. Trust.</i>
1. Public Service.	1. Perpetual Care Funds.
2. Minor.	2. Other Permanent Public Trust Funds.
<i>III. Departmental</i>	3. Income for Investment.
1. General Government.	4. Private Trust Funds and Accounts.
2. Protection of Life and Property.	a. Guarantee deposits.
3. Health and Sanitation.	b. Protested taxes and assessments.
4. Highways and Bridges.	c. Tailings.
5. Charities.	d. All other.
6. Soldiers' Benefits.	
7. Education.	<i>III. Investment.</i>
8. Libraries.	1. Sinking Fund Securities.
9. Recreation.	2. Investment Fund Securities.
10. Unclassified.	
<i>IV. Public Service Enterprises</i>	<b>PAYMENTS</b>
1. Light, Heat, and Power.	<b>Maintenance</b>
a. Electric.	<i>I. Departmental.</i>
b. Gas.	1. General Government.
2. Water.	2. Protection of Life and Property.
3. All Other.	3. Health and Sanitation.
<i>V. Cemeteries.</i>	4. Highways and Bridges.
<i>VI. Administration of Invested Funds.</i>	5. Charities.
<i>VII. Interest.</i>	6. Soldiers' Benefits.
	7. Education.
	8. Libraries.
	9. Recreation.
	10. Unclassified.
<b>NON-REVENUE.</b>	<i>II. Public Service Enterprises.</i>
<b>Offsets to Outlays.</b>	1. Light, Heat, and Power.
<i>I. Departmental.</i>	a. Electric.
1. General Government.	b. Gas.
2. Protection of Life and Property.	2. Water.
3. Health and Sanitation.	3. All Other.
4. Highways and Bridges.	
5. Charities.	
6. Education.	

Instead, therefore, of meeting the question in the manner which was theoretically most logical, namely, by providing for the general installation of a uniform system of municipal accounting throughout the Commonwealth, with annual returns to a central bureau upon a schedule based upon the accounting system, thus making possible comparable statistical presentations, the Legislature made provision merely for furnishing municipal accounting officers with a schedule which was to be uniform for all cities and towns—but there was no comprehensive preliminary attempt to secure the adoption of uniform classifications or methods in the keeping of accounts. To devise a schedule which would be scientific in its conception and, at the same time, capable of securing classified information upon a uniform basis from the existing heterogeneous and inaccurate "systems" of municipal bookkeeping, which, like Topsy, had "just growed," and the character of which was reflected in poorly arranged, uninformed, and inaccurate auditors' and treasurers' reports, was a very difficult matter; and it has imposed a task of considerable responsibility and magnitude upon this Bureau.

In this bulletin he goes at some length into the difficulties experienced by the bureau and the failure of many municipalities to correctly classify their receipts and payments. He has prepared a comprehensive plan for the classification of municipal accounts, which he believes to be adapted to the demands of the various municipalities of that State. The future schedules

#### II. Public Service Enterprises.

- 1. Light, Heat, and Power.
- a. Electric.
- b. Gas.
- 2. Water.
- 3. All Other.

#### III. Cemeteries.

#### Municipal Indebtedness.

- 1. Temporary Loans (including tax loans).
- 2. Bonds and Notes from Sinking Funds.
- 3. Bonds and Notes from Revenue.
- 4. Metropolitan Sinking Fund Requirements.
- 5. State Assessment for Abolition of Grade Crossings Loan Fund.
- 6. Bonds refunded, Current Year.
- 7. Warrants or Orders of Previous Years.

#### To Sinking Funds.

- 1. From Revenue.
- 2. Premiums on Municipal Bonds sold.
- 3. Sale of Real Estate, etc. (when paid to sinking fund).

#### Agency, Trust, and Investment Transactions.

##### I. Agency.

- 1. Taxes.
- a. State.
- b. Non-resident bank.
- c. County.
- 2. Liquor Licenses remitted to State.
- 3. Expenditures on Account of Abolition of Grade Crossings.
- 4. All other.

##### II. Trust.

- 1. Perpetual Care Funds.
- 2. Other Permanent Public Trust Funds.
- 3. Income for Investment.
- 4. Private Trust Funds and Accounts.
- a. Guarantee deposits.
- b. Protested taxes and assessments.
- c. Tailings.
- d. All other.

##### III. Investment.

- 1. Sinking Fund Securities.
- 2. Investment Fund Securities.

#### PAYMENTS

#### Maintenance

- I. Departmental.*
- 1. General Government.
- 2. Protection of Life and Property.
- 3. Health and Sanitation.
- 4. Highways and Bridges.
- 5. Charities.
- 6. Soldiers' Benefits.
- 7. Education.
- 8. Libraries.
- 9. Recreation.
- 10. Unclassified.

#### II. Public Service Enterprises.

- 1. Light, Heat, and Power.
- a. Electric.
- b. Gas.
- 2. Water.
- 3. All Other.

#### III. Cemeteries.

#### IV. Administration of Invested Funds.

#### Interest.

#### Outlays.

- I. Departmental.*
- 1. General Government.
- 2. Protection of Life and Property.
- 3. Health and Sanitation.
- 4. Highways and Bridges.
- 5. Charities.
- 6. Education.
- 7. Libraries.
- 8. Recreation.
- 9. Unclassified.

#### RECAPITULATION—RECEIPTS

##### Revenue.

##### For Current Charges.

##### For Outlays.

##### Offsets to Outlays.

##### Municipal Indebtedness.

##### From Sinking Funds.

##### Agency, Trust, and Investment Transactions.

##### Total Receipts.

Balance on hand, beginning of year.

##### Grand Total.

#### RECAPITULATION—PAYMENTS

##### Current Charges against Revenue.

##### Maintenance and Interest.

##### Debt.

##### Sinking Funds.

##### Outlays.

##### Premiums and Offsets to Outlays paid to Sinking Funds.

##### Debt (from sinking funds).

##### Bonds refunded, Current Year.

##### Temporary Loans (including warrants or orders of previous years).

##### Agency, Trust, and Investment Transactions.

##### Total Payments.

Balance on hand, end of year.

##### Grand Total.

of the Bureau will be prepared in accordance with this scheme, as will also the system of accounting prescribed for adoption by the municipalities. In preparing this the director complies with an act of the Legislature of 1909 which authorizes him to "prescribe standard forms intended to promote the systematic accounting of financial transactions and the publication of the same in the city and town reports." This scheme is described in 57 pages of this bulletin. The general outline is presented herewith.

During the year 1909 there were added to the staff of this bureau Mr. Harry T. Upham, for twenty-three years city auditor of Cambridge; Mr. Theodore N. Waddell, for several years special agent of the U. S. Census office; and Mr. Edward H. Fenton, for seven years town accountant of Brookline. These three with Mr. Wm. G. Grundy, for many years second clerk of the bureau, constitute the staff of expert accountants, whose duties have been in part to collect the schedules from delinquent cities and towns, and, when necessary, to visit those from which defective returns had been received, for the purpose of making needed corrections and obtaining missing data. There were also employed on this work six expert clerks to check up the entries, compare them with those given in published reports and compile them for publication.

One of the difficulties experienced by the Bureau has been delay of the accounting officers in returning schedules. "The blanks on which the returns for 1907 were to be entered were mailed simultaneously to the accounting officers of the 354 cities and towns of the Commonwealth on April 3, 1908. At this date, one year and nine months afterwards (Jan. 1, 1910), we have received the schedules of 298 cities and towns, including 70 from cities and large towns which required the personal visit of a special agent, and without which no return would probably have been secured. There thus remain 56 towns from which no return whatever has been received, and to obtain which it has not been possible to send an agent." (No explanation is made of why it was impossible to send an agent to these towns at some time during the 21 months which had expired since sending out the blanks.) In the report for 1909 to the Massachusetts Legislature, from which the above quotation is taken, Mr. Gettemy also calls attention to the fact, which his experience has demonstrated, that there must be a reform in municipal accounting methods; and also that a considerable number of the accounting officials are apparently incompetent, since many of the financial reports are poorly arranged, contain glaring errors, misstatements, figures which mean nothing and columns which fail to add correctly, while many important data are entirely omitted. "I think I risk little in saying," continues Mr. Gettemy, "that for every dollar lost through defalcation or actual dishonesty, hundreds have been lost or wasted through loose, unbusiness-like methods of handling finances, and failure to keep the citizens properly informed from year to year by means of reports compiled so as to reflect actual current conditions, not only with technical exactness, but in language easily understood by the ordinary citizen."

#### CITY MAINS AND RECORDS

In his report for 1909 the City Engineer of Moline, Ill., Mr. Clark G. Anderson, gives a brief statement of the records and maps which are kept on file, and which appear to be more complete than is, unfortunately, the case in many cities. The City Engineer is also secretary of the Board of Local Improvements and keeps the records of the board in a record book. He also has on file in the office original records such as petitions, estimates, resolutions, contracts, bonds, etc., pertaining to improvements inaugurated and completed by the Board from the time of its creation, these being kept in a fireproof vault and properly indexed for ready reference. He has prepared and keeps up to date a wall map of the city drawn to the scale of 150 feet to the inch, which map shows the lots, blocks, and tracts of land and the official street and house numbers. There is also a "water tap record," on which are entered the location of water mains, valves and taps. The shut-off valve in each service pipe has been given a tap number for identifi-

cation, these numbers at the time of the report running consecutively from one to 3,196. Valves in public and private mains are given numbers beginning with 3,213, and those on service pipes to city buildings are numbered from 3,472 to 3,491, inclusive.

The "sewer service record" shows the location and size of public sewers and the location of T and Y branches left in said sewers for house connections. Another book shows the plans and grades for public improvements completed.

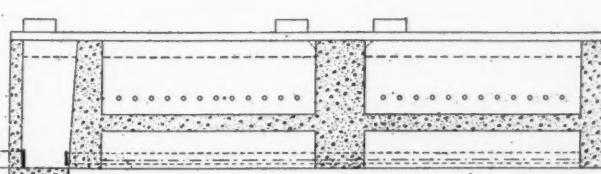
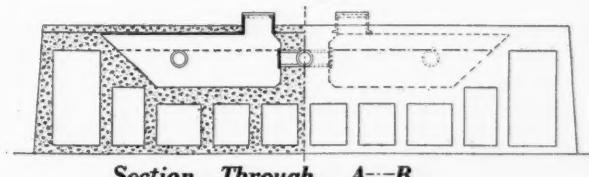
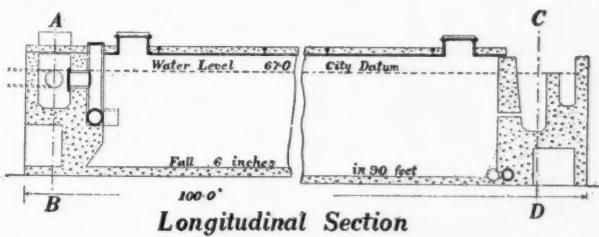
Wall maps have been prepared for the Fire Department, Water Works Department and Plumbing Inspector's office showing the location of all water mains, hydrants and valves. All of these records and maps are kept as nearly up to date as possible.

#### SEPTIC TANKS IN OTTAWA

WHAT is known as the south drainage system of Ottawa, Canada, was constructed in 1909, although considerable remained to be done to the system during the present year. This system, in which are used reinforced concrete, brick and tile sewers, drains an area of 150 acres with an outlet into the Rideau River. As the Provincial authorities would not allow untreated house sewage to be discharged into the river it was decided to provide septic tanks, and construction on these was begun September 1, 1909.

Slow progress was made at first with the excavation, as water was found one foot below the surface of the ground, necessitating continuous pumping to allow the men to work. The tanks are 90 feet long, 14 feet wide and have an average depth of 7 feet, with a grit chamber at one end and an aerating weir and effluent channel at the other. The tanks were constructed entirely of concrete, the mixture being 1 cement, 3 of sand and 6 of stone. For the reinforcement of the roof standard 56-pound railroad rails were used as cross-beams, the intermediate spans being reinforced with expanded metal. The general construction of the tanks is shown in the accompanying sections.

Access to the tanks is obtained by six standard manholes. As the sewers are on the combined system, a storm overflow is provided, 24-inch vitrified pipe being used, which extends to the Rideau River, at the bank of which it is continued by a 24-inch steel pipe which extends into the river for a distance of 120 feet and discharges through an outlet 12 feet below the surface of the water. The construction of the tanks was completed about the first of December.



SECTIONS OF OTTAWA SEPTIC TANKS

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JULY 20, 1910

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Economy in Sewage Treatment

THE article on another page giving the result of experiments on precipitation of sewage calls attention to the importance of considering more carefully than is often done whether the appliances and the proportions thereof which are adopted in sewage purification are the most economical for securing the desired or necessary ends. That mechanic would be considered most time-wasting and inefficient who would use a fine-cut file for all purposes; but he should use a coarse file for rapidly working off the metal to approximate lines, then use a finer one for still closer approximation, and use the finest files only for producing the finished surface, and might even omit the last altogether when such surface was not required. The same general rule should be applied to sewage and water purification, and, in fact, to street cleaning and other municipal services. And yet in too many cases, because a fine surface is desired the fine-cut file only is used for the entire operation; that is, a slow sand filter used alone, or some other oxidizing appliance, is dosed with practically crude sewage; with resulting lack of economy and reduced efficiency of the appliance.

As a general thing the higher the degree of perfection which a given appliance of any kind is adapted to, the more expensive is its construction and operation. A settling tank for re-

moving a large percentage of suspended matter from sewage occupies much less space and costs much less to operate and clean than does a sand filter capable of performing an equal service. Engineers generally, other than experts on the subject, have just begun to fully realize the desirability of double and triple treatment of sewage, and there is still much to be learned even by the experts. The article above referred to presents data which corroborate others which have recently been accumulating in indicating that sufficient study has not been given to the simpler methods of removing suspended solids of sewage, such as sedimentation; and, after all, aside from the removal of harmful bacteria, the removal of the suspended solids and final disposal of the same are the most important problems in sewage purification—and this also is just becoming fully realized. If a settling tank of a given length will remove, say, 85 per cent as much solid matter as another tank four times the size, there is certainly a suggestion offered that some method of removing the remaining 15 per cent might be found which is more efficient than quadrupling the size and cost of the settling tank. This may consist in simply putting this amount of additional burden upon the finishing process of the plants, whether this be sand filter, sprinkling filter, etc., or the introduction of an intermediate process, possibly of coagulation followed by further sedimentation or rapid filtration.

The cost of sewage purification plants is generally a very considerable item and anything which makes to economy in cost of either construction or operation is well worthy the most careful consideration and study. The past quarter century has given us many improvements and new methods of treating sewage, has developed valuable new ideas and demonstrated the fallacy of many others, but there still remains to be worked out a more thorough knowledge of the appropriate place which each of the several methods of sewage treatment should occupy in any given scheme, and also a more definite and unanimous agreement among sanitary and legal authorities as to just what degree of purification is necessary under the various conditions met with.

Hypochlorite at Harrisburg

DURING the year 1909 the filters of the Harrisburg water works did excellent service, the average bacterial results being better than for any previous year. It was thought desirable, however, to experiment with hypochlorite in order that its serviceability might be learned, and it was used on eight days in August, twenty-one in September and continuously from then to the end of the year. The soda mixing tanks were used for preparing hypochlorite solution, which was mixed in 100-pound charges and kept constantly agitated by compressed air forced through perforated galvanized pipes in the bottom of the tank. The amount used was measured by an orifice box, from which it flowed through a galvanized pipe to a manifold of perforated pipes located in the intake well. The hypochlorite was always used in combination with sulphate of alumina. A dose of .05 to .1 grain per gallon so reduced the bacteria that the remainder were amply taken care of by the amount of alumina necessary to remove color and turbidity. Water containing 80,000 bacteria per cc. was satisfactorily purified by .07 grain of hypochlorite. During October the average number of bacteria in the river water was 1633, in the treated water 23 and in the filtered water 3; during November the numbers were 754, 28 and 5 respectively. December rains brought down a great deal of filth collected during the drought, but did not greatly dilute the stream, and the average bacterial content for the month was 26,804, with a maximum of 86,250; which treatment reduced to an average of 452 and maximum of 7500, and filtration to an average of 11 and maximum of 120. "This water, using alumina alone, would have been very hard to handle," say the commissioners in their report, "and would undoubtedly have caused trouble."

The treatment was supervised by Prof. James M. Caird, as consulting chemist, and George G. Kennedy, the superintendent of the water commission.

## NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

## ROADS AND PAVEMENTS

## Should Use More Machinery in Road Work

Augusta, Ga.—H. C. Wells, a road engineer of the United States Department of Agriculture, has made a report to the Commissioners of Richmond County regarding their road work. He says he found good progress being made and that there is a strong public sentiment in favor of good roads. The work has, however, been handicapped by the lack of proper road-building machinery. Wheel-scrapers could often be used to better advantage than wagons. Disc harrows should be used for mixing sand and clay, instead of relying on traffic to do it. He recommended the purchase of a seven-ton gasoline roller as best suited to local conditions, to save hauling of coal and water. Western wheel-scrapers are very useful in mountain work, the report says.

## Beet Sugar Refuse for Roads

Billings, Mont.—A scheme for improving the roads of the State by coating them with refuse from the manufacturers of granulated sugar from sugar beets is being generally discussed in this section and will be submitted to the Good Roads Convention. The idea grew out of an experiment made by one of the tennis clubs at Billings. When its court was laid out the dust occasioned considerable annoyance, also the fact that after each rain the soil clung to the shoes of the tennis players. In looking about for a cheap binder, one of the members suggested the refuse syrup. It answered the purpose admirably when mixed with salt and poured over the court to a depth of several inches. The ground was rendered almost impervious to water and the dust was entirely eliminated. It worked almost as well without salt.

## Oiled Streets Demanded by Citizens

Bridgeport, Conn.—Director M. A. Kenny's most frequent visitors nowadays are residents from various sections of the city asking that oil be sprinkled on the streets on which they live. It matters not whether these citizens live on some main thoroughfare that has already been selected as a street which is to receive the new dust-destroyer or whether they dwell among the by-ways and hedges, their cry is the same, "Give us oil." "The Board of Apportionment made a mistake when they appropriated only \$4,000 for oil and \$28,000 for sprinkling with water," says the Director.

## Oiled Streets Are Not Sprinkled, Says Attorney

Hartford, Conn.—According to a legal opinion submitted by Corporation Counsel Hyde the Street Commissioners cannot assess abutting property owners for the oiling of streets instead of watering them. The Commissioners may do the work, but only at the expense of the city, under the present charter.

## Contractor Asks Release from Contract

Lockport, N. Y.—Fred Vunk, a Buffalo contractor, has asked the Aldermen to release him from a contract for a cement walk on Prospect street, on which he bid \$1,700, \$600 below the next lowest bidder. Vunk has found that he made a mistake in his estimate. The city refuses to release him unless he gets the consents of all the property owners on the street.

## Operations of Municipal Asphalt Plant

San Francisco, Cal.—The following recapitulation of work done by the Municipal Asphalt Plant during May has been filed with the Board of Public Works: Work at plant, 24,192 cubic feet of wearing surface, at cost of \$6,328.32; 6,522 cubic feet binder, cost \$894.28; labor at plant, \$2,552.22; repairs, oil, fuel, etc., \$1,658.69, or a total of 30,720 cubic feet material at a cost of \$11,433.51. Work on streets, 152,163 square feet general repairs (roving gang), at cost for labor and teaming of \$5,904.48, or cost per square foot, \$0.0388; total cost of material, \$11,433.51, or cost per square foot for material of \$0.0751, making the total cost per square foot for general repairs, \$0.1130.

## Paving Litigation Adjusted

Fort Wayne, Ind.—Under a compromise agreement the city of Ft. Wayne will pay to the Metropolitan Engineering and Construction Company the original price of \$48,514.82 for the paving of Columbia avenue and Taylor, Breckenridge and Suttenfield streets, and \$2,750 as interest on the amount, while the company will pay court costs aggregating \$264.95. This settlement has been arrived at after more than two years of litigation, the property owners asserting that the paving did not come up to specifications. Recently the paving company obtained judgment in the Federal Court at Indianapolis for \$53,048.45, which included principal and interest to that date. While the city was announcing its intention of appealing the case, the warring factions got together and reached an adjustment. A year ago the paving company offered a settlement on a basis of \$2,750 less than the city now agrees to pay.

## Absentee Landlords Oppose Good Roads

Kansas City, Mo.—Missouri has a special road district law under which by a majority acreage vote—one vote for each acre of land—good roads may be constructed. The law provides for payment in one, five or twenty years. In the latter event the road can be paid for in yearly installments of interest and principal, amounting to a cost each year of from 12 to 25 cents for each share. With a law so favorable for the improvement of roads it might reasonably be supposed that there had been a large amount of highway work done under its provisions. Such, it appears, has not been the case, although the law has been in effect for many years. A correspondent of the Kansas City Star expresses the belief that absentee landlordism is the principal obstacle that has prevented the building of a large number of roads under the provisions of this statute.

## Sprinkling Oil on Macadam Streets for First Time

Lock Haven, Pa.—The tank car of oil recently ordered from the Atlantic Refining Company has arrived, and the macadam roads in the city are being oiled with the new sprinkler purchased for the purpose. This is the first time Lock Haven has tried the oil method of treating roads. As it has proven very successful at other places, it is hoped there will be a big improvement in the condition of the roads here.

## Big Paving Contract Blocked by Suit

Shreveport, La.—Miles of paving, that would represent an expenditure of three-quarters of a million dollars, have been blocked by a suit filed by two citizens, who ask for the cancellation of the present contracts, which were recently awarded by the City Council. In their petition they claim that better contracts could have been secured from unsuccessful bidders, and that the city's bonds were bartered for the paving when the law says these bonds shall be sold at par. A new call for bids is given as their object. The authorities tried vigorously to press the suit to trial, and the District Court set it for trial, notwithstanding the usual time for the court's vacation had begun. The plaintiffs, uselessly protesting against the trial so hurriedly, appealed to the Supreme Court, which has now granted a writ of prohibition, ordering the trial postponed until after the vacation, which will be next September, at least a couple of months hence. Complying with the instructions, District Judge Bell ordered the delay, meaning great expense and inconvenience to the companies involved—Hot Springs Construction Company, Southern Bitulithic Company and the Fibertine Company—which seem afraid to proceed in face of the litigation, as it might result in the contracts being declared of no effect.

## Will Use Tarvia on Neglected Streets

Waterbury, Conn.—The roads about the city have not yet been sprinkled or treated with oil this season, and are inches deep with dust. Benjamin Chatfield, the Superintendent of Streets, has a quantity of Tarvia on hand, and will use it on South Main street.

## SEWERAGE AND SANITATION

### Typhoid Epidemic at Canal Dover, O.

Canal Dover, O.—Canal Dover has a bad typhoid fever epidemic which the State Board of Health is investigating. There are 36 cases and they are in restricted territory. There have been three deaths. The cause of the epidemic has not been determined by Dr. H. M. Platter, Medical Inspector of the Board.

### New Canal Will Solve Problems

Chicago, Ill.—President R. R. McCormick has sent a communication to the Trustees of the Sanitary District, stating that the Sag-Calumet canal, which will reverse the flow of the Calumet River, will not require for its proper sanitation the withdrawal of a greater amount of water from Lake Michigan than was granted in connection with the old Chicago River improvement. The flow of water will be restricted only upon the creation of either of two conditions, currents in the Calumet River so strong as to interfere with navigation, or the reduction of the level of Lake Michigan. There is danger of neither of these, according to the highest authorities, Mr. McCormick says. He advises the immediate construction of the canal. Accordingly, proceedings for land condemnations will begin at once.

### Suggestion to Prevent River Pollution

Columbus, O.—General John C. Speaks has a plan, in his opinion an inexpensive and efficient one, for preventing the pollution of the river within the city limits by pouring waste and refuse into it. The city now pours no sewage proper into the rivers, but the closest watch that can be placed on the streams fails to prevent those who live along the banks from throwing objectionable matter into the water. General Speaks would have the state dam in the Scioto, near Mound street, built at least five feet higher, which would raise the level of water in the river so as to make a permanent boating stage from the city to the foot of the storage dam. With such a course many Columbus people would own boats and the seven or eight-mile stretch would be much used by both hand and power propelled craft. "When that condition would be reached," said General Speaks, "there would no longer be any pollution of the river tolerated. The general public in the use of the river in this way would make the best and most vigilant patrol of the river and make it as it should always have been, a beautiful stream, instead of a succession of stagnant pools as it now is in summer time."

### Manufacturers' Wastes Clog Sewers

Lynn, Mass.—Deputy Sewer Commissioner Keating, in his annual report, complains that the sewers in several streets are clogged because hair, lime, etc., from morocco factories is allowed to get into them. It has been necessary to keep men at work on them almost constantly.

### Health Board to Fight Disease

Portland, Ore.—The Oregon State Board of Health, at its quarterly meeting, has taken decided steps toward safeguarding the public health. A campaign of education along the lines of protecting the people of the state from common errors has been determined upon. The propaganda will be spread in the state newspapers, by special bulletins and by lectures, as well as by every practicing physician. Farmers are to be enlightened on methods of preventing the communication of disease from infected animals. A health car will be attached to farming demonstration trains sent into the rural districts. Among the campaigns planned to be taken up at once is the warfare against the house fly. Tuberculosis and typhoid fever will also be made the objects of attack by means of popular education on these subjects.

### Many Complaints on Sewage

St. Paul, Minn.—The State Board of Health is kept busy the last few weeks taking care of complaints that come to the office regarding sewage from creameries, slaughter houses and other places that become stagnant on account of the lack of water in the streams. Most of the complaints are referred to the local Health Officers, and, in some cases, the board writes direct to the parties complained of, and, if necessary, makes an investigation and issues an order to have the nuisance abated.

### Wants to Buy City Sewage

Denver, Col.—A bill for an ordinance is pending in the City Council which provides for the sale by the city to the Denver Irrigation and Fertilizing Company of the waste water and sewage from the city sewer system. The company states that it will build conduits connecting the mouths of the sewers with a plant it is to erect in Adams County. There the sewage will be converted into fertilizer and the water sold for irrigation. For the right the company offers the city \$5000 a year until the population increases to 250,000, when the rate would be \$6250, and for every 50,000 increase in population thereafter \$1250 additional annually.

### Septic Tank Litigation

Saratoga Springs, N. Y.—The injunction against the sewage disposal plant of Saratoga Springs has been lifted. The action was brought by the Cameron Septic Tank Company for damages and an injunction for the alleged infringement on the Cameron patent for the chemical disposal of sewage. This case has been in the courts for several years and has been fought by the municipalities, including this village, that have sewage disposal plants. The injunction is lifted pending the final disposition of the case against Knoxville, Ia., which will be taken to the United States Supreme Court.

### Against Public Cup

St. Paul, Minn.—Placards warning citizens against public drinking cups have been posted in hotels, post offices, railway stations, court houses, city and town halls, and other places where the public cup is used. The placards were sent out by the State Board of Health, H. M. Bracken, Secretary, to county and municipal Health Officers, who were requested to post them where they would do the most good. The warning follows:

Caution! Dangerous diseases such as diphtheria, tuberculosis, etc., are frequently communicated by the use of public drinking cups.

Protect yourself and those dependent on you.

Provide yourself with an individual cup and thus avoid the possibilities of contamination.

By order of the State Board of Health.

H. M. BRACKEN, Secretary.

## WATER SUPPLY

### Query as to Water Pollution

Bernardsville, N. J.—A discussion arose, at a recent meeting of the township committee, over the quality of the water furnished by the Bernards Water Company, which gets its supply from Osborne's pond. It was said that cows and ducks were often seen in the stream and that boys used it for swimming. The State Board of Health will look into the complaint.

### City Not Liable for Water Furnished Hydrants

Chillicothe, Mo.—The City Council, by advice of City Attorney F. W. Ashby, has ignored a bill of \$15,499, presented by the City Water Company for hydrant rentals since October 16, 1906, when the franchise and contract expired. It is held that in no way can the city be held responsible as a franchise and contract must first have been approved by the citizens; a verbal contract by Council or any member of Council does not hold the city responsible. The water used in the drinking fountains and in the rest room at the City Hall is paid quarterly by the city. There are 135 fire hydrants in place, and a test will be made in the courts to bring about proper adjudication.

### Complain of Warm Water

Duluth, Minn.—Citizens in West Duluth are complaining of the tepid water and the bad taste. The warm weather has raised the temperature of the water in the lake to some extent, and in the reservoirs more, until the temperature of the water, as delivered, is 10 degrees above the normal for the season. Manager L. N. Case, of the Water and Light Department, will have less water carried in the reservoirs, so fresher lake water will be supplied.

**Croton Water Treated with Hypochlorite**

New York, N. Y.—Dr. Ernst J. Lederle, Commissioner of Health, says that extraordinary precautions are being taken on the Croton Watershed. Bacteriological examinations revealed recently that there had been a large increase of bacteria in Hunter's Brook, which supplies Croton Lake. This increase of bacteria followed the last heavy rains. The Health Department, aided by the Board of Water Supply and the Department of Water Supply, Gas, and Electricity, acted with haste. Over a ton of hypochlorite was put into the stream, at the rate of one pound per million gallons. The whole watershed of the brook was inspected thoroughly. Dr. Lederle says his men found a very serious condition. The brook lies in a section of the Croton Watershed through which part of the Catskill Aqueduct is being constructed. The city unfortunately, he said, does not own all of the land in the watershed. A large force of inspectors and laborers have been making a general clean-up of the whole watershed for the last few days. They have destroyed imperfect sanitary arrangements of camp followers and have provided safe methods of destroying all refuse. Dr. Lederle says that the water now shows only a normal amount of bacteria, and that the city water is now perfectly safe. He has discontinued the process of treating the water with the hypochlorite.

**New Well Doubles Water Supply**

Natchitoches, La.—A new well was brought in by the city, July 4, which doubles the water supply of its plant. Superintendent J. R. Carroll, of the City Water and Light Plant, who sank this well, says by test its capacity is 130,000 gallons per day. This additional well makes the city supply for fire protection adequate in every particular.

**Advised to Boil Water**

Niagara Falls, N. Y.—Mayor A. C. Douglass has felt it to be his public duty to again warn the people of Niagara Falls not to drink the water from the city's supply pipes without boiling it. He points out that the Niagara River is more polluted than ever owing to dredging operations at Buffalo and elsewhere.

**Warned to Boil All Water**

Salem, Ore.—As a safeguard to the public health Mayor George F. Rodgers has issued a warning to the effect that the water consumed by those supplied by the Salem Water Company be thoroughly boiled before using. The Salem Water Company is installing a new suction pipe, and on account of this new equipment being located over several mud flats and receiving the wash of many sewers, both Mayor Rodgers and City Physician O. B. Miles suggest that extra precaution be taken to avoid another typhoid fever epidemic, such as visited Salem but a few months ago.

**Vein of Water Delays Dam Work**

Schenectady, N. Y.—Work on dam No. 4 of the barge canal has been suspended owing to the fact that a vein of water has been struck which flows into the excavation so rapidly that it is impossible to lay the concrete foundations of the dam. Pumps drawing 20,000 gallons of water a minute have been in operation, but have failed to exhaust the water vein. The contract is held by the Pittsburg Eastern Construction Company of Troy, and it has been said that the State Engineer's office may have to change the location of the dam. The water comes from one of many veins through that section, and is of the same quality as the city water pumped from Rotterdam. The heavy pumping has not affected the city supply and no change has been noticed at the pumping station.

**Reservoir, in Danger, Emptied**

Tacoma, Wash.—Fearing the Hood street reservoir may not remain intact until it can be repaired, Commissioner Nicholas Lawson, of the Department of Light and Water, has completed arrangements to have the big basin emptied of all water. The reservoir supplies water for the low service which reaches the downtown districts, and to replace it the long-abandoned pumping station A will be pressed into service.

**STREET LIGHTING AND POWER****One Light Plant Enough for Small Village**

Albany, N. Y.—The attitude of the up-State Public Service Commission in respect to the establishment of public service companies in districts which may be amply served by existing companies is well illustrated in a decision just rendered by the Commission on the application of the Hartwick Power Company for permission to establish and operate an electric light plant in the village of Richfield Springs. The Commission denied the application on the ground that the village is already served by the Richfield Springs Electric Light and Power Company, and that the territory to be served is too small to permit of the successful operation of a second company. In order to prevent its denial of the application of the new company affording an opportunity to the old company to fail to meet the reasonable requirements of the village, the Commission has ordered that the old company put its plant in first-class condition, thus to be prepared to give all the service which may be required of it. The company has agreed to comply with the directions of the Commission and has undertaken to furnish the village upon contract alternating current enclosed arcs at \$59.50 per lamp per annum and lighting the village hose house gratis. In this way the Commission, it is pointed out, at once steers clear of approving competition for competition's sake, and of risking the danger of an existing company, thus protected, failing to give good service.

**Town in Darkness Pending Litigation**

Taylorville, Ill.—A temporary restraining order preventing the City Council from interfering with the poles, wires or lamps of the Taylorville Gas and Electric Company has been granted by Circuit Judge Jett of Hillsboro. This action on the part of the company results from a notice given the company to remove its street lamps within ten days, the purpose being to make way for the lamps of the Taylorville Railway, Light, Heat and Power Company, which has been given a five-year contract to light the streets of the city. The Taylorville Gas and Electric Company's twenty-year franchise expired a year ago, and the City Council declined to renew it or to give the company a straight-out electric franchise. This fact is set up in the declaration filed, and the Court is asked to compel the Council to give the company a franchise embodying fair conditions. The only franchise that has been offered the Taylorville Gas and Electric Company by the City Council, since the expiration of its electric franchise, took away from the company its perpetual franchises for gas and steam heat and gave them new franchises fixing the prices to be charged for these commodities. The row between the company and the City Council has resulted in Taylorville being plunged in darkness. Several weeks ago the company asked for a renewal of its twenty-year contract for street lighting, and the Council paid no heed to the request. The company gave the Council ten days to consider the matter and then turned off the street lights which had been in operation for twenty years. The suit probably means that Taylorville will be kept in darkness until the courts decide the matter. It will therefore likely be a year, perhaps longer, before Taylorville's streets are lighted again, unless the Railway Company suspends the street lights from cross-arms attached to poles, as the other company has all the street corners occupied with its equipment.

**Emporia May Sell Its Light Plant**

Emporia, Kan.—Prof. B. F. Byer, head of the Electrical Engineering Department at the State Agricultural College at Manhattan, has been called to Emporia to appraise the local electric light plant. Emporia contemplates selling its plant to a corporation that offers to put in a street car system if it can obtain the plant and get a franchise.

**Oppose Commercial Lighting by City Plant**

Fort Wayne, Ind.—Howard P. Page, a Baltimore accountant, is making an examination of the books and accounts of the municipal lighting plant for the traction company interests, who will oppose the city's embarkation into commercial lighting. A report submitted by Mr. Page early in the present year showed the city lighting plant as a losing proposition financially.

**Mantles Broken by Swarm of Bugs**

Haverhill, Mass.—More than 200 of the gas street lights are out of order as a result of the swarms of moths, bugs and flies which are attracted by the glare of the lamps at night. The police have been reporting them during the siege of warm weather, but one night last week the returns eclipsed all records in point of numbers, more than 200 lights being reported as requiring new mantles and globes. This is due directly to the action of the swarms of bugs which fly through the flames, breaking the mantle, crawling into vents and causing them to smoke and the accumulation of dead ones, which prevents the light from burning.

**Big Plants Must Shut Off Water**

Neenah, Wis.—As a result of the prolonged drought and consequent low stage of water, the War Department rule aiming to maintain the water at a given depth has been enforced, and the twenty-five or more manufacturing plants in this vicinity are operated by steam. A few which have no auxiliary power have been forced to shut down. The Interurban Electric Railway Company has been hampered in its operation, but not seriously. It is possible that should present conditions continue a serious sanitary problem will arise as a result of decaying matter accumulating on the water front. The order which prohibits manufacturers from using water for their machinery is War Department Rule No. 12, which provides that water may be used for power purposes only after a permit has been obtained.

**Towns Will Now Have Light**

North Wales, Pa.—The Suburban Gas Company last week inaugurated the system of lighting in North Wales, and lights will be supplied to surrounding towns.

**Better Illumination for Philadelphia**

Philadelphia, Pa.—Chief McLaughlin's plans for the better illumination of the city include the erection of electric light standards and pedestrian safety and rest platforms in the centre of Broad street at all street intersections between Spruce and Vine streets, similar to the experimental standard of this order erected at Walnut and Broad streets for public criticism. The plan embraces two such standards, one either side of the car tracks at each street intersection. Laurence McCormick, of the Bellevue-Stratford Hotel, was one of the first to send to Mr. McLaughlin a letter commending the innovation. Mr. McCormick said that apart from providing for the safety of pedestrians, particularly women and children, crossing Broad street, and the improved illumination of the intersection of Broad and Walnut streets at night, it was the best system for the regulation of traffic, possibly, that could be devised. With such a fixed centre for making turns in any direction at street intersections, he said, drivers of any kind of vehicle were stopped from making dangerous short cuts, and, moreover, in the case of automobiles especially, were obliged to slow up to a reasonable speed. Mr. McLaughlin said that he had received also many other commendations of the scheme. Mr. McLaughlin said the erection of the new Broad street lights would not cost the city anything beyond maintenance, as, in the case of the new lights in Market street, the Philadelphia Electric Company had agreed to erect the standards, as well as the raised concrete platforms, for pedestrians at its own expense. That company, also, he said, would affix to each standard street signs, which at night are brilliantly illuminated, and would also affix such street signs on the light standards, at each street intersection in Market street free of expense to the city. Each of these street signs, he said, cost about \$15, while the cost of each of the new Broad street electric standards would be about \$125. Among other arrangements made with the Philadelphia Electric Company to perform work in consideration of its franchise, Mr. McLaughlin said that the company had agreed to lay a new electric cable in Broad street, between City Hall and Spruce street, to replace the city's worn-out cable, and also to lay electric light service pipes under the sidewalks in front of all new building operations with connections with each building, to obviate sidewalks hereafter being torn up where electric lighting is wanted. "There will be no more unsightly electric light poles erected in front of houses," the chief said, "nor will sidewalks be torn up from time to time for such connections."

**FIRE AND POLICE****New City Fire Engine Successfully Tested**

Dayton, O.—Chief Frank E. Ramby and engineers of the City Fire Department have tested the new \$6,000 Nott fire engine and demonstrated its good qualities to the heads of the municipal departments and the members of the City Council. The engine was first tested at the canal, near Library Park, but it was feared that mud from the canal bed would hamper its action and it was removed to the fire cistern near the Main street engine house. Though the specifications of the engine called only for a capacity of 600 gallons per minute, the engine demonstrated that it was capable of an emergency flow of 750 gallons per minute, and would maintain a flow of 611 gallons per minute indefinitely. Special Engineer Wilkins, of the Nott company, was present at the test and demonstrated a number of the new features of the engine. It is a universal action machine and has an oiling device that is new in Dayton and promises to be very effective. The new engine is of the third size type, but while it is one of the smallest in the city, it is the most modern.

**New Fire Alarm Indicators**

Hartford, Conn.—The tape indicator installed in Fire Headquarters in Pearl street some months ago has proved so satisfactory that three more are being installed in engine houses Nos. 1 and 2, and the truck house in Pearl street. The indicators are more satisfactory than the old style long in use in the Department, in that every blow of the fire bell, for whatever purpose, is recorded by a puncture in the tape. On the old indicators an automatic lock operated after the first round of blows, and no further blows were recorded until the lock was released by hand. Thus a second alarm was not recorded while a company was out on a fire, and another company coming in might be at a loss to ascertain the number of an alarm box if any was pulled. The tape indicator records everything. In time it is expected the new style will be installed throughout the Department.

**Fire Engine Rams Store**

Paterson, N. J.—On the way to a fire the steamer attached to engine company No. 3 plunged into a store at Twelfth avenue and Straight street, wrecking the front of the building and injuring two of the three horses. Driver Bergen was not seriously injured. One of the horses was a green animal, procured a week before. In driving down Twelfth street hill the horses got beyond control of the driver. Unable to check the speed of the animals, two courses were open to the driver, either one of which was exceedingly dangerous. It was out of the question to expect to make the turn into Straight street without mishap. To continue over Straight street was to simply plunge horses and apparatus into the ten-foot railroad embankment at the foot of the sharp incline west of Straight street. Bergen, however, determined to try and turn the corner safely. The speed, however, was too great, and the three horses with the heavy steamer swerved slightly and crashed headlong through a store window, carrying away glass and woodwork and tearing a great hole in the walls and ceilings and ripping up a part of the flooring.

**Asks Suspension of Sprinkling During Fires**

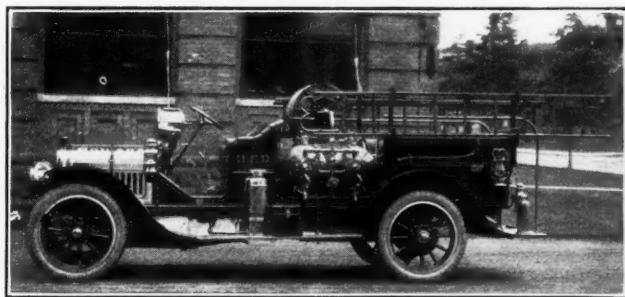
Saginaw, Mich.—Chief George W. Wallis asks all residents during the hot weather, at which time the domestic consumption of water is very great, when they hear the fire bells to turn off all lawn hose promptly. He asks further that as little water as possible in the residences be used, which will give the Department all the available pressure at the time of the fire.

**Police Collections from Fines Unusually Heavy**

Wheeling, W. Va.—The annual report of Chief of Police Howard Hastings shows that \$16,784 was collected in fines and ambulance fees, an amount \$6,000 larger than the year before, and larger than any year on record. This increase is attributed to stricter enforcement of the city ordinances. The revenue collected amounts to about one-third of the sum appropriated for the use of the Department.

## Hartford's New Auto-Chemical

Hartford, Conn.—A new auto-chemical was recently delivered to the city of Hartford by the Pope-Hartford Company. It is known as a combination chemical and flying squadron outfit, and is designed for the quickest possible flight to the scene of a blaze. It is equipped with a four-cylinder 40-horsepower motor, capable of giving any desired speed up to the limit of safety. The wagon carries two ladders, one 17-foot and one 10-foot extension; two 40-gallon chemical tanks, 300 feet of hose with reel, 10-inch search-light on dash and several spare parts.



NEW POPE-HARTFORD AUTO CHEMICAL ENGINE

At a recent fire the action of this apparatus is compared with that of horse-drawn equipment by the Hartford *Courant* as follows:

With whirring siren the squad car went out by way of Pearl St. passing the truck house before that apparatus was out, Trinity St., Washington St., New Britain Ave., and Fairfield Ave. Squad A was turned about and on the way back to quarters as the steamer companies one after the other trundled up to the scene. Squad A's run was over  $2\frac{1}{4}$  miles.

No. 15's run was something less than three-quarters of a mile. The first steamer from No. 8 house did not reach Freeman St. until between twelve and fifteen minutes from the first stroke of the alarm. Each trip was almost two miles. No. 1, about a quarter of a mile longer run was correspondingly behind, and last of all was the truck. Meantime, as above stated, the auto had got there, its crew had taken time to look the situation over, and the apparatus had started back able to return as fast as it went out. The horses, on the other hand, hot and tired, were driven back slowly.

In an account of another fire in the central portion of the city on the same day the *Courant* stated: "Squad A bore the brunt of the fire fighting for a while, as it beat out all the other companies."

## Majority Criticizes Chief for Washington Street Fire

New York, N. Y.—The report of Fire Chief Edward F. Croker, which is the minority report of the commission named to investigate the Washington street fire, was sent in to Fire Commissioner Waldo's office last week. Chief Croker, it is understood, confines his report to a formal record of the proceedings of the board. The reports of the other members of the board criticize the Chief's management of the fire. The majority report states that the alarms succeeding the first call were not turned in as fast as they should have been. It also criticizes the positions in which men were placed in that they interfered with instead of aided each other, and, in general, that the fire was not fought "scientifically."

## Auto Fire Engine No Longer Favored

Springfield, O.—No more fast records by the auto fire engine, and a more business-like system of starting to a fire is the new order handed down by Chief Hunter. After this the auto will have nothing on the other apparatus in starting to a fire. Before the new ruling, as soon as an alarm was turned in the auto was cranked and the machine would be off with a flying start, being several squares away before the others were started. When the auto was cranked it made so much noise that the other men were unable to catch the alarm at times. Under the new order the machine is not to be cranked until after the alarm has been turned in. As soon as the man on watch receives an alarm of fire by telephone he will first notify the engine house nearest the scene before sounding the alarm. Under these orders it will be necessary for the telephone operators to see that there is no delay in connecting the houses.

## GOVERNMENT AND FINANCE

## Boston Sells 4 Per Cent Bonds

Boston, Mass.—Bids were opened in the City Treasurer's office July 11 on the \$3,803,000 4 per cent City of Boston bonds. The issue was awarded to a syndicate composed of Lee, Higginson & Co., R. L. Day & Co., Estabrook & Co., N. W. Harris & Co., E. H. Rollins & Sons, Blodget & Co. and Merrill, Oldham & Co. at the bid of 100.269 and interest for the \$1,000,000 of forty-year bonds, all or none, and par for the balance.

## Chicago Bonds Taken in London

Chicago, Ill.—Financial credit of the City of Chicago took a big jump upward when Walter H. Wilson, City Comptroller, received formal notice that \$250,000, or one-half of the total of the city's latest bond issue, has been disposed of in Europe. Financial men say that it is unusual for American municipal securities to be marketed on the other side of the Atlantic and that the sale of a quarter of a million dollars' worth of Chicago bonds there is demonstration of this city's good standing among European investors. The notice to the Comptroller's office came in the form of a request that the bonds be registered as owned by "Govett Sons & Co., 6 Throckmorton street, London, E. C., England." The bonds are water-fund bonds, drawing interest at  $4\frac{1}{2}$  per cent, payable semi-annually, and expiring July 1, 1913.

## Simplified Taxpaying

New York, N. Y.—Comptroller W. A. Prendergast has arranged to have all the real estate tax bills properly made out and indexed prior to October 1 and put on file in the different borough offices of the receiver of taxes; this, it is explained, will make these bills instantly available upon the application of the taxpayer, who will not be required, as formerly, to wait in line while a search is made and the bill is being written out. Next, it is announced, at the same time the bills are written schedules in detail will also be prepared with controlling totals, which will enable the Comptroller to exercise accounting control as well as maintain an effective audit of each day's collection. In other words, the auditing of municipal receipts will be just as rigid as the auditing of disbursements now is, which has not been the case in the past. The third and final innovation is thus detailed: "The development of a system whereby taxpayers may pay their taxes by mail. This will be made possible by the establishment of a registry bureau in each of the offices of the receiver of taxes. In this bureau taxpayers wishing early advices by mail of assessments against their property may file their names, together with the section, volume, block and lot number of the property upon which they wish to pay the taxes."

## Will Adopt Time Limit for Contracts

Lansing, Mich.—In the future all bids for public improvements must contain an agreement by the bidder to finish his work by a specified time. The cost of inspection for days in excess of this time will be charged to the contractor. City Engineer Spark in looking over the records found cases where the cost of inspection on a \$200 sewer job cost more than on a similar piece of work costing \$800.

## New Fund May Be Established by City

Pasadena, Cal.—City Auditor D. D. Kellogg has recommended to the Council the establishment of a new fund, to care for part of the city's revenue. This is to be known as the "reserve fund," and is to be made up of any money that may be left over from the ordinary funds.

## City Solicitor Must Prepare Bond Ordinances

Pittsburg, Pa.—The recent decision of the Supreme Court in declaring illegal the bond issue of \$6,775,000 has caused Mayor Magee to issue an order putting into effect the charter provision that the City Solicitor shall prepare all ordinances. City Solicitor O'Brien said he was not consulted about the proceedings in Councils preparatory to the 1909 bond issue, and never saw the bond ordinance until he met it in litigation.

## COMMISSION GOVERNMENT

**New Charter for Oakland—Sapulpa Votes for Plan—Harrisburg and Other Cities Seeking Change**

Oakland, Cal.—As the result of the election, July 6, Oakland is assured of a new charter. The Citizens' Progressive Party, which won that election, in its before-election platform advocated the following salient provisions:

A commission form of government with the Mayor elected by the people and not by the commission.

The initiative and referendum and recall with such fair percentages as will most facilitate their use for the control of franchises and for effective self-government by the people.

The acquisition, ownership and operation of public utilities by the city.

The municipal ownership and control of water supply, waterfront and wharves, and the disposal of public franchises only on a basis which will insure to the city a just return on the value of the privilege granted.

The exercise of civil service reform in all municipal departments.

The employment of Oakland citizens only on municipal work, the wages to be based upon the standard governing private employers.

The short ballot in the interest of intelligent choice by the electorate.

The holding of direct primary non-partisan elections, the rotation of names on the ballots at all elections and the abolition of ward lines.

The borough system in the event of consolidation with adjoining cities and a consolidated city and county government.

**Harrisburg to Investigate Commission Plan**

Harrisburg, Pa.—Harrisburg will officially investigate, through a special Councilmanic Committee, the question of municipal government by commission if a resolution introduced by Selectman B. Frank Snavely is passed. The resolution provides for a committee of five, two of Select and three of Common Council, and the committee is to ascertain as fully and completely as possible by corresponding with all the cities where the plan has been tried successfully or otherwise.

**Two Cities to Vote on Charter Amendments**

Holland, Mich.—Amendments to the city charter providing for the redistricting of the city into six wards, and of doubling the salaries of the Mayor, Councilmen and other minor changes in the present code, has been brought up before the Council and will be submitted to the voters September 6.

Port Huron, Mich.—At a meeting of the Charter Revision Committee it was decided to submit to the people a plan to establish the commission form of government. The charter will be taken to Lansing, where it will receive the signatures of the Governor and Attorney-General, when it will be returned and held ninety days.

**Mayor's Committee to Investigate Commission Plan**

Kalamazoo, Mich.—Mayor Farrell has appointed a committee of fifty citizens to investigate commission government and outline a charter similar to the needs of the city.

**Petition for Commission Quickly Signed**

Lexington, Ky.—With only a few more than half of the committeemen at work, and they handicapped to a great extent on account of the unfavorable weather conditions, and with several precincts of the city yet untouched, 2,124 signatures were secured to the petition to have the commission form of government submitted to the vote of the people at the November election, on the first day of the campaign, which is more than 400 in excess of the number required.

**Commission for Sapulpa**

Sapulpa, Okla.—By a majority of 342 out of a total of 446, the commission form of government was adopted in this city at a special election.

**City Government Illegal?**

Wilmington, Del.—N. W. Harris & Co., New York brokers, who recently bought \$200,000 of Wilmington bonds, have refused to accept them on the ground that the government of this city is not legal. Their action is based on a decision rendered by their lawyers, Hawkins, Delafield & Longfellow, of New York. The attorneys say that as the Superior Court here on June 7 decided the last municipal election was illegal and that the Democratic officials are de facto only, the securities have no legality.

## STREET CLEANING AND REFUSE DISPOSAL

**Mayor for Spotless Hub**

Boston, Mass.—Mayor John F. Fitzgerald is dreaming of a spotless town. He wants to see no peanut shells on the sidewalks, no banana peels or scraps of paper, and he says that Boston can become one of the cleanest cities in the world if the people will take hold and help. He has issued an appeal to the citizens to see to it that they are as careful in keeping waste material off public property as they are in keeping it off their own lawns.

**City Abolishes Free Collection from Business Houses**

Chicago, Ill.—The city has abolished the free collection of garbage and waste from business houses in the loop district. The ordinance governing such matters, which has been in force for years, provides that the owners of business houses shall remove waste at their own cost. Special orders have been issued from time to time for the Street Department to do this work until business men have come to look on it as a right.

**Clean Loop Streets at Night**

Chicago, Ill.—Although an appropriation of \$14,000 for cleaning of streets at night has been denied Superintendent of Streets Fowler, announcement was made that an attempt to carry on part of the work will be made with 78 laborers and two flushing machines. "We can take care of streets in the loop only," Mr. Fowler said.

**Better Sprinkling Service Wanted**

New Britain, Conn.—President John E. Moore, of the Board of Public Works, is receiving many complaints about the street sprinkling service. Too much water is the complaint from some and too little from others. It is said that the trolley sprinkler leaves the portions of the street between the tracks of the railway dry.

**Favor Continuation of Present System**

New Haven, Conn.—Chairman John Elliott, of the Special Aldermanic Committee which was appointed to consider the disposal of the city's garbage, ashes and other refuse, filed the report of the committee with the Board of Aldermen, at the last meeting. The report opposes the plan for the city to procure an incinerating plant and recommends that the present system of garbage disposal, with a number of improvements, be continued. The report states that there is no great amount of dissatisfaction over the present method, but that the trouble lies in a faulty application of the system now in vogue.

**Consumers' League Wants Incinerator**

New Haven, Conn.—A committee of ladies from the Consumers' League held a meeting with Mayor Frank J. Rice in the Mayor's office last week. It was stated after the meeting that the committee made a plea for the establishment of an incinerator plant in this city and entered a protest against the acceptance of the report of the special Aldermanic committee, which is against the establishment of an incinerator plant here. Mayor Rice stated that he would take the matter under advisement when the report reached him from the Board of Aldermen.

**Flushing Streets Twice a Day**

Saginaw, Mich.—Supt. John Malcolm of the Street Department has received the new flushing machines from the Sanitary Street Flushing Machine Company, of St. Louis, Mo., and has put them in commission. At this season of the year the Saginaw water works are not able to supply a high pressure, but satisfactory results were obtained at hydrants where the pressure was only 20 pounds. The paved streets will be flooded twice daily.

**Grab Bag for Tin Can Collectors**

Seneca, Kan.—The Mayor of Seneca met with success in an original plan of ridding the city of tin cans. The Mayor arranged a number of prizes which were concealed in packages and permitted any boy, who would collect fifty cans to have a free grab and to repeat as often as he could collect another fifty cans. The prizes in the grab bags were sufficient to reward the boy for his troubles and 30,000 cans were collected in one day.

## RAPID TRANSIT

### First Trial of Rapid Transit Building by Assessment

Brooklyn, N. Y.—Steps for building the first subway on the assessment plan, which the new law permits, were taken when the Public Service Commission adopted a resolution laying out a rapid transit route in Utica avenue, Brooklyn, south from the Eastern Parkway to a place in Flatbush avenue, near to Jamaica Bay. The action was the result of a petition signed by a majority of the property owners along the proposed route and who have announced their willingness to have the road built by assessing the cost on the territory benefited.

### Leather Straps in Cars Spread Disease

Omaha, Neb.—Hanging straps in street cars should be made of aluminum or some other sort of metal or of wood, instead of leather, and street cars should be fumigated at regular intervals, according to Health Commissioner R. W. Connell. The Health Commissioner gave out his opinion in discussing the investigation of street car straps being made in San Francisco which has attracted the attention of the medical world.

### Residents of Street May Build Railroad

Pasadena, Cal.—If the city refuses to undertake the management of a municipal street railway line out Lincoln avenue, some of the residents of that street are in favor of building the line and operating it under their own management as a private enterprise, provided they can be assured of any kind of support from the city.

### Tacoma Has No-Seat-No-Fare Ordinance

Tacoma, Wash.—The Municipal Commission passed a near "no seat no pay" ordinance last week in connection with its fight against the Tacoma Railway & Power Company to bring about better service and a 5-cent fare to all points within the city limits. As a matter of fact the ordinance comes nearer being a "no seat no ride" measure than anything else, according to Mayor Fawcett's interpretation. It provides that the street car company shall operate a sufficient number of cars on all lines between the hours of 6 and 9 o'clock a. m. and 4 and 7 p. m. to provide a seat for each passenger from whom a fare is demanded. Persons desiring transportation shall not be kept waiting longer than 10 minutes if upon attempting to board a car they learn it is seated to capacity. General Manager L. H. Bean of the Tacoma Railway & Power Company says no street car company in the world could comply with the provisions of the new measure. He claims the law is worthless and that his company will put no additional cars in service to meet the requirements.

## MISCELLANEOUS

### Property Owners Pay for Street Signs

Chicago, Ill.—Elbert C. Ferguson, Chairman of the Street Sign Committee of the Chamber of Commerce, is meeting with encouraging success in his plan of having all the streets in the city marked by uniform signs to be paid for by subscription of the property owners. Madison street has already been furnished with the signs. The signs are of blue enamel with white letters. They consist of two parts joined by a common bolt at right angles to the intersecting street. They are on posts 9 feet from the ground, about the height of the average person plus one-half of the perpendicular of his range of vision. It is the intention to have one sign at the northwest and one at the southeast corner of each street. They range in cost from \$4.50 to \$10, depending upon the style of mounting.

### Wisconsin Town to Build Municipal Theatre

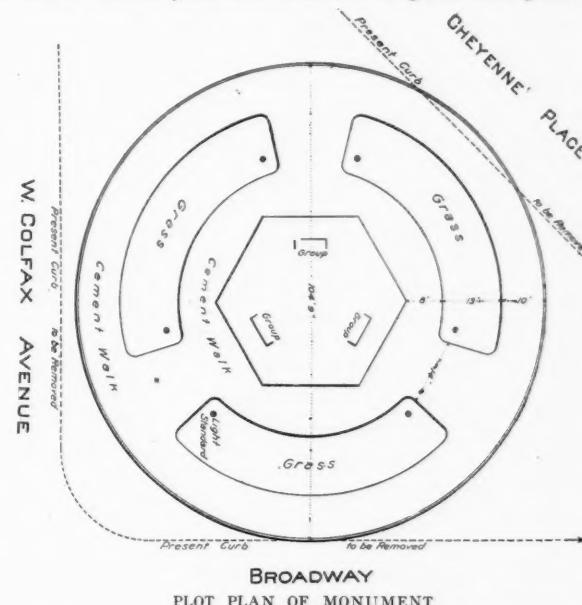
Spring Valley, Wis.—Spring Valley is about to build a municipal playhouse. The Maiden Rock bank has taken the \$5,000 bond issue made for the purpose of erecting the house and work will be rushed so that it may be in operation by winter time. Business men plan that farmers and others shall have the privilege of using the building at all times as though it were their own. The projectors expect to get large returns in the way of increasing the town's popularity.

### Markets Must Comply with Sanitary Rules

Columbus, O.—The city Health Department, complaining of unsanitary conditions, is ready to clean up the city markets and will issue an order to market tenders to comply with sanitary conditions by covering their produce to protect it from flies and dirt, or suffer prosecution. The order will give violators about five days to comply. The order is the result of complaint of market conditions, especially at Central Market. Meat, butter, cheese and other articles have been found there covered with flies and wholly unprotected from dust. Many of the dealers make no effort at all to keep their produce in a sanitary condition. At some of the stands the conditions are deplorable from the sanitary standpoint, it is charged. The order of the Board will command compliance with the health rules and will apply to all grocers and other dealers in addition to the market men. The rules provide that certain articles of food, such as butter, bread, pastries, cheese and the like, shall be so covered as to be protected from dust, and that all meats shall be screened from flies.

### Progress on Pioneer Monument

Denver, Colo.—Work on the Pioneer Monument is making steady progress. The cut shows the proposed treatment of the site, which has been approved by Frederick W. MacMonnies, the sculptor, by the Public Improvements Committee of the Real Estate Exchange and by the city. It should be remembered that the monument forms part of the Civic Center plan and that the original triangular site



PLOT PLAN OF MONUMENT

of the fire house will be merged in an open plaza. The city has let a contract for circular granite curbing, similar to that of the Isle of Safety, to Seerie Bros., for \$1,000. Six lamp standards of the boulevard pattern will be placed on the grass plots as shown in the cut. This will enable the lighting of the monument to be completed in a satisfactory manner, without any permanent structural work.

### Municipal Dock Secured by Hartford, Conn.

Hartford, Conn.—Hartford now has a municipal dock, being the first city on the Connecticut River to have one. The dock, which includes also a warehouse, has been leased for a year from the Colt Patent Fire Arms Company, and in case the experiment proves a success it is intended to build on 1,000 feet of water front owned by the city south of Wawarme avenue. Mayor Edward L. Smith and City Engineer Frederick L. Ford are enthusiastic over the new utility and Commissioner E. H. Warner, of the Dock Commission, who was primarily responsible for the dock, was designated to "drum up business." Mr. Warner said he had already collected data on dock charges and had talked with many merchants and manufacturers and was ready to prepare a schedule of rates. While the dock will probably not be a howling success the first year, he said, it would be the start of what should prove a most desirable thing for Hartford. The lease runs from July 1 to March 31, 1911, for \$1,250, and the rental each successive year will increase \$250.

## RELIEF OF CONGESTED TRAFFIC

## Subway Only Remedy for Chicago Says Police Expert After European Trip—Recommendations in Report

Chicago, Ill.—Permanent relief of congested downtown traffic, especially in the loop district, can be afforded only by a subway, according to Capt. Charles C. Healey of the Chicago mounted police. He made a comprehensive report to the Association of Commerce, which sent him as its representative to investigate traffic conditions in European cities to the end of improving Chicago conditions. Chicago's traffic rules are as good as any in the world, but Chicagoans are not so observant of them as they should be, according to the report. Capt. Healey found that the methods employed by all of the cities he visited were copied from the London system and declared that Chicago's methods are fully as good as those of the English metropolis. Capt. Healey's suggestions for adoption by Chicago were condensed as follows:

The pedestrians and drivers of Chicago, like those of London, should be taught and compelled to obey the directions of officers at street crossings.

A school should be organized for the instruction of newly appointed traffic men, which should be attended for at least a month previous to the entry upon their duties. These men should be taught general police duties, crossing regulations, proper demeanor to the public, and they should also be instructed as to the ordinances of the city and the method of presenting and handling their cases in court.

There should be absolute unobstruction of street cars and the rule should be applied to make all slowly moving vehicles keep as close to the curb as possible.

The streets in the business district should be cleaned at night and properly sprinkled so as not to obstruct traffic during the daytime.

## Police Will Regulate Traffic at Main Cross Street

Bridgeport, Conn.—President Hallen, of the Police Board, has installed a whistle signal system, for the regulation of traffic at the corner of Main street and Fairfield avenue. By the new method two policemen will be stationed at the intersection; one officer will use the whistle and the other do the signalling. After the traffic has passed north and south the policeman in charge will blow his whistle and both officers will change their positions, standing on the Main street cross walks, thereby allowing the traffic to go east and west.

## Municipal Cadets Corps Established

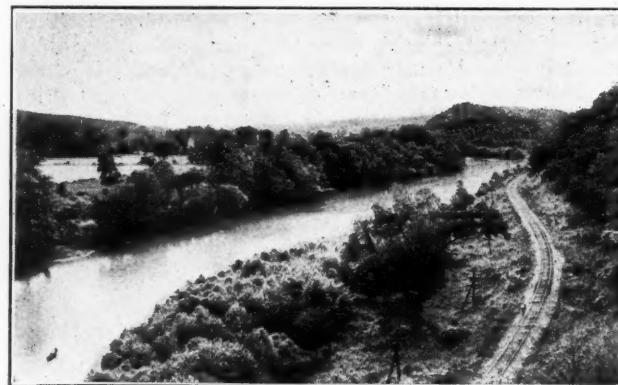
Oakland, Cal.—The establishment of a municipal cadets corps as part of the playground system is now an accomplished fact. Forty boys between the ages of 14 and 20 years have been organized into a company and, under the direction of Col. Raymond Campbell, of the State Militia and the United States Army, and director of the Bushrod playground, Albert Vail, have already commenced drilling. They have been equipped with regulation uniforms and guns and are showing marked progress. It is the intention of those interested to enlist at least 1,000 boys. The age limit will be 16 years and over, although at the present time there are a number of boys of fewer years in the company. Army officers at the Presidio have been interested in the movement and will help with advice and practical assistance. On July 4 the newly-formed company gave an exhibition drill at the celebration at Bushrod Park. The company will go on a four days' excursion to the base of Mt. Diablo, where they will be given practical experience in military tactics under the supervision of army men. It is the ultimate intention of providing target practice for the embryo warriors.

## Good Draughtsmen Scarce

Pittsburg, Pa.—The Civil Service Commission last week conducted examinations for the position of general draughtsman, which pays \$2,500 a year. There were 18 applicants, all of whom worked for hours over questions which, to the layman, formed a most difficult test. To schooled draughtsmen, however, the examination was not so difficult. The position to be filled requires general work for all departments, as occasion may develop. The city now pays its draughtsmen more than in former years. The increase was made necessary because of the demand for men of this profession. This demand is emphasized by the fact that corporations in the East recently resorted to display advertising in newspapers to secure trained men to do their work.

## Outer Park System for St. Louis

St. Louis, Mo.—The Parks Committee has submitted to the Municipal Assembly and the County Court petitions containing more than 12,000 signatures requesting that there be placed on the ballot at the November election the ques-



VIEW ALONG THE MERAMAC, CONTEMPLATED OUTER PARK SYSTEM

tion whether or not the Outer Park or Public Reservation District shall be established. The Civic League has issued a circular stating that no improvement, in their opinion, will add more to the future welfare and comfort of our people than the creation of this outer park or public reservation system. They request that each member of the League will constitute himself a committee of one to advocate an affirmative vote on the question.

## Practical Benefits of Attractive Parks

Syracuse, N. Y.—"Syracuse should capitalize its natural advantages and attract thousands of visitors as a result of adequate expenditures for park improvements," said George E. Kessler, the expert of the Park Commission, who arrived in Syracuse last week and spent a day with Superintendent David Campbell, in inspecting the work in progress in the Syracuse park system and making suggestions as to work about to be begun. "Denver has given the cities of the country a great object lesson in the winning of material benefits by the beautification of the city and development of its park system. By this policy it attracts thousands of visitors and these visitors make extended stays there. Syracuse has fine natural advantages and a splendid location. It is the key point to a wide section. It should be made a stopping point rather than a mere passing point for travellers."

## No More Playground Sites

Philadelphia, Pa.—At a meeting of the Playground Association last week it was agreed that no more offers of sites for playgrounds should be considered for the present, owing to the expense which their opening and maintenance would necessitate. It was shown that the expense of maintaining the playgrounds at present is about \$1,000 a month, without considering the cost of games, supplies, etc.

## Offer \$150 for City Dock Plan

Tacoma, Wash.—A prize of \$150 has been posted by the Municipal Commission to the Tacoma architect who shall submit the most pleasing design, from both the artistic and utility standpoints, for the proposed city dock on the city waterway. The first unit of the dock is to be 300x80 feet in size, three stories high. The materials are not specified in the resolution authorizing the prize, nor is the time within which the competition closes. The award is left solely to the judgment of the commission. The first floor of the building will be for the handling of freight; the second story will be devoted to passenger service and the third to public market and other purposes that the city may see fit to designate. Special elevator systems will be installed to facilitate the movement of people and freight.

## City May Own Telephone Plant

Willmar, Minn.—The City Council has passed an ordinance authorizing the city to build and own a local telephone exchange, means to be provided by an issue of "telephone certificates" in the sum of \$35,000. The ordinance will have to be ratified by the voters at a special election.

## LEGAL NEWS

## A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

## Construction of Streets and Sidewalks

Smith vs. Town of Hendersonville.—Under Hendersonville Town Charter, authorizing the grading of streets, providing that the lot owners may be required to pave the sidewalks under specified circumstances, and authorizing the submission to the voters of the question of paving the streets, the board of commissioners of the town may, on the voters at an election, ordered on a petition praying for a general scheme of street and sidewalk improvement, voting for the issuance of bonds for such purposes, use the proceeds for the grading of sidewalks and of streets, as distinguished from sidewalks, and for the payment of compensation to engineers employed to establish the grades of streets and sidewalks, as well as to pay for the paving of sidewalks.—Supreme Court of North Carolina, 68 S. E. R., 145.

## Extension of Territory—Liability for Debts

White et al. vs. City of Atlanta et al.—While the Legislature may provide for an election to determine whether unincorporated territory contiguous to a municipal corporation shall be annexed thereto and the corporate limits extended so as to include such territory, they are not obliged to do so, but may extend the limits without the consent of those residing or owning property in the added territory. Under such circumstances, unless otherwise provided by law, debts of the corporation contracted before the limits were extended are chargeable upon the city as enlarged by the territory added, as well as upon that included in the boundaries before they were extended.—Supreme Court of Georgia, 68 S. E. R., 103.

## Defective Sidewalks—Contributory Negligence

Mayor, etc., of City of Birmingham vs. Gordon.—Where a defective city sidewalk on which plaintiff fell was not so defective or such a pitfall that it would be negligence as a matter of law to attempt to walk over it, and was generally used by the public, plaintiff was not required to walk in the street or to go on another street because she knew that the walk was defective, and, having testified that she looked where she stepped and was attempting to walk carefully over the walk when she fell, she was not negligent as a matter of law because she had knowledge of the defect.—Supreme Court of Alabama, 52 S. R., 430.

## Condemnation of Water Right—Evidence

Benninghoff et al. vs. Town of Palisade.—In proceedings by a town to condemn a water right, all the facts as to the condition of the land and its surroundings, its improvements and capabilities, including the productive character of fruit trees, the character of the soil, and the amount of water supplied to the land by an irrigation ditch, are admissible in determining the injury to the land resulting from the appropriation.—Supreme Court of Colorado, 108, P. R., 983.

## Addition of Territory—Statutes

State ex rel. Sigsbee et al. v. City of Birmingham et al.—Code 1907, providing for the addition of new territory to cities, is not in conflict with Constitution 1901, providing that no county shall levy a greater rate of taxation than one-half of one per cent and that no city, village, or other municipal corporation, other than certain specified cities, shall levy or collect a higher rate than one-half of one per cent, in that the statute permits the transfer of territory where the tax rate is so limited to cities which are expressly exempted from the limitation by the Constitution.—Supreme Court of Alabama, 52 S. R., 461.

## Contracts—Letting to Lowest Bidder

Fourmy et al. v. Town of Franklin et al.—Under act of 1902, paving contracts must be let to the lowest responsible bidder who can give satisfactory security; and where a Town Council awards such a contract to one of the bidders, ignoring two lower bids, without even plausible reasons, the award will be set aside as an abuse of the discretion vested in the council.—Supreme Court of Louisiana, 52 S. R., 249.

## Injuries from Defective Street Tunnel

Connelly v. City of Boston.—A city is not relieved of liability for injuries to a pedestrian from a defect in the street, though such defect was caused by the Transit Commission in the construction of a tunnel, as authorized by Statute 1902. The known facts that an excavation was going on beneath a street calls for special vigilance on the part of the city to ascertain whether dangerous defects have been caused in the surface of the street by such excavation. In an action against a city for injuries due to the caving in of a street under which a tunnel was being excavated by the transit commission, under Statute 1902, evidence held sufficient to present a question for the jury as to whether the city knew or should have known of the defect in time to have prevented the injury. Supreme Judicial Court of Massachusetts, 91 N. E. R., 998.

## Obligation to Provide Safeguards for Navigation

Erie & Western Transp. Co. v. City of Chicago et al.—The city of Chicago built a water works crib in the navigable waters of Lake Michigan within the roadstead to and from the port of Chicago under a permit from the War Department, which required that suitable lights and such aids to navigation as might be required by the United States lighthouse establishment should be maintained on the crib. At night during a dense fog the steamer Conestoga entering the harbor came into collision with the crib and was so injured that she sank. At the time the crib had been substantially completed, with a light tower in which a temporary lantern was suspended, which, however, could not be seen on the night in question for a distance of more than about 150 feet. A bell had been in use on the crib as a fog signal, as on the other cribs maintained by the city, but was not sounded on that night. Held that in erecting the crib, where it was, the city assumed the obligation to provide thereon suitable fog signals for the protection of navigation whether specifically prescribed by the permit or the lighthouse board or not; that the nonperformance of such duty by the failure to provide a bell which, as shown by the evidence, could have been heard for a mile or more, rendered the party responsible therefor liable for the resulting damages.—United States Circuit Court of Appeals, 178 F. R., 42.

## Sewers—House Connections—Railroad Property

Village of River Forest v. Chicago & O. P. Elevator R. Co.—An ordinance providing that a new sewer should be constructed to connect with an old sewer already in the street, and that house connections would be constructed every 45 feet along the length of both the new and the old sewer, is not double improvement, since when the new sewer was completed there would be but one line of sewer in the street. A village ordinance, providing for the construction of a sewer and the placing of house connections every 45 feet of its length, and providing for the assessment of cost against the property benefited, is unreasonable as to railroad property fronting on the street for 700 feet, since the village had no right to assume that the railroad's property would be platted into 45-foot lots.—Supreme Court of Illinois, 91 N. E. R., 682.

## Municipal Aid to Railroad—Violation of Conditions

W. K. Henderson Iron Works & Supply Co., Limited, v. City of Shreveport et al.—Where a railroad company, to which a special tax had been voted by a city on specified conditions, had forfeited all right to the tax, it could not contest the right of a taxpayer to demand of the city reimbursement of the portion of the tax already paid.—Supreme Court of Louisiana, 52 S. R., 477.

## Defective Sidewalk—Constructive Notice

Carlson vs. City of Dunkirk.—A municipality has the duty of active vigilance to ascertain the condition of its walks, and, when a defect exists so long that in proper reasonable exercise of such vigilance the defect would be discovered, constructive notice of it exists. If, in an action for injury on account of a defect in a walk, there is any evidence of constructive notice of the defect, the court cannot nonsuit, though it may set aside a verdict for plaintiff, if contrary to or against the weight of evidence.—Supreme Court of New York, 123 N. Y. S., 215.

## NEWS OF THE SOCIETIES

**International Association of Fire Chiefs.**—Fire Chief John P. Quigley and the committee in charge have practically completed arrangements for the annual convention of the International Association of Fire Chiefs to be held in Syracuse, N. Y., August 23 to 26. From present indications fully 500 fire chiefs from various parts of the world will be present and it is expected that in the neighborhood of 1,500 other persons will come to Syracuse for the event. Among the prominent fire fighters from foreign countries will be the chiefs of the departments of Dublin, Ireland; Birmingham, England; and Honolulu. The far North will be represented by Chief J. E. Buchanan of Winnipeg, Canada, and the territory in this country from which representatives will be present is bounded on the north by Lansing, Mich.; west by Denver, Col.; south by New Orleans, La., and east by New York. Chief Edward F. Croker will represent the metropolis. The headquarters of the chiefs will be the Onondaga and the convention sessions will be held at the Court House. The drill hall of Troop D, at the State Armory, has been secured for the placing of exhibits. Chief Quigley said that he has received many letters from manufacturers of various kinds of fire fighting apparatus, making application for space in the Armory during the convention. There will be shown, he said, the very latest appliances of the profession, including automobile engines, combination wagons, hook and ladder trucks, etc. Handsome convention badges have been ordered by Chief Quigley. In design the badge is a medallion, bearing the picture of the president of the association, Chief George W. Horton of Baltimore. The medallion is suspended from a bar at the top of a bit of ribbon. The chiefs will wear badges with red ribbons; exhibitors, blue ribbon, and reception committee and women, white ribbon. The officers of the association are: President, Chief Horton, Baltimore; first vice-president, Chief John Thompson, Toronto; second vice-president, George Miller, Reading, Pa.; secretary, Chief James McFall, Roanoke, Va.; treasurer, Chief Daniel Larkin, Dayton, O.

**State Police Association of Connecticut.**—The annual convention of the association was held at Stamford, July 7. The election of officers resulted in the following choice: President, Chief Henry D. Cowles, New Haven; vice-president, Chief William F. Brennan, Stamford; secretary, James J. Landrigan, Meriden; treasurer, William Rawlings, New Britain; executive committee, Captain John H. Redgate, Bridgeport; Chief Stephen C. Wheeler, Winsted; Capt. D. W. Bradley, Danbury; Chief A. W. Ingalls, Middletown; Capt. George M. Beach, Waterbury; Capt. Garret J. Farrell, Hartford. The officers are also members of the executive committee. The total membership of the association is now 700.

**International Hygiene Exhibition, Dresden.**—The initial preparations for this exhibition, which is to be held in Dresden, from May to October, 1911, have been completed. The exhibition will include five sections: Scientific, Historical, Popular, Sport and Industry. Invitations have been issued to organizations interested to make exhibits. The administration office is at Zwickhauer Strasse 35, Dresden.

**Wisconsin League of Municipalities.**

—The twelfth annual convention of the league was called to order at Fond du Lac, July 12, by Mayor J. C. Schubert, Madison. Several hundred delegates were in attendance. Mayor E. W. Clark, Fond du Lac, delivered the address of welcome. He made the cheering announcement that the ordinance closing the city at midnight had been suspended. Mayor B. G. Edgerton responded, speaking of the educational effect of meetings like the present one in the movement for bringing modern business methods into city government. The presidential address was made by Mayor J. C. Schubert, Madison. He spoke of the increasing attendance at league meetings. Referring to municipal government in general, he said one great trouble was to find men to accept the offices of mayor and aldermen and devote the necessary time and study to the work. Few men, he continued, realize when they assume the duties of municipal office what it means to themselves to attend strictly to the detail duties of the office. They soon find they must neglect the duties of their own private business or neglect the duties of public office. The speaker thought the time was not far distant when ample compensation would be given to such offices so that they could afford to neglect their private business. Papers were presented as follows: Home Rule for Cities, by F. E. McGovern, formerly district attorney, Milwaukee County; Railroad Taxation in Cities, by Mayor F. R. Crumpton, Superior; New Street Paving Law and Its Operation, by T. P. Silverwood, City Attorney, Green Bay; Permanent Paving of City Street as it is Affected by the Presence of Street Railway Tracks, by F. G. Simmons, superintendent Milwaukee Electric Railway and Light Co.; Concrete Pavement, by J. C. McCullough, city engineer, Fond du Lac; Special Assessments, by Chas. H. Hamilton, Milwaukee; Municipal Problems, by Mayor Emil Seidel, Milwaukee; Corrupt Use of Money in City Elections and How to Stop It, by W. J. Desmond, Milwaukee; Relationship Between Cities and Public Utility Companies, by Ernest Gozenbach, manager Light, Power & Railway Co., Sheboygan.

The following officers were elected: President, Mayor A. J. Horlick, Racine; vice-president, B. G. Edgerton, Oconomowoc; secretary and treasurer, W. G. Kirchoffer, Madison. District vice-presidents—First, Mayor W. J. Knight, Monroe; second, Mayor John Holtan, Stoughton; third, Mayor T. L. Cleary, Platteville; fourth, Mayor Emil Seidel, Milwaukee; fifth, Ald. Henry Smith, Milwaukee; sixth, Mayor E. W. Clark, Fond du Lac; seventh, Mayor J. B. Flemming, Eau Claire; eighth, City Attorney Haughen, Manitowoc; ninth, Mayor Joseph Fisher, Marinette; tenth, Controller H. E. Marquardt, Wausau, and eleventh, Mayor Frank Crumpton, Superior. The executive committee is as follows: A. S. Douglas, Monroe; H. W. Bolens, Port Washington; H. G. Truesdale, Berlin; P. S. Carrington, Waupun, and J. C. Schubert, Mayor of Madison.

Resolutions were adopted calling on the legislature to take action to preserve the natural resources of the State, and asking for an amendment to the present railroad taxation law, providing a just and equitable apportionment and return of some portion of the railway taxes to the cities of the State.

**International Association for the Prevention of Smoke.**—At the annual convention held at Minneapolis, Minn., several important and interesting papers were read, in which many phases of the problem of satisfactory smoke prevention were brought out. The many separate problems relating to smoke prevention and the economical burning of fuels and the conservation of the fuel supply were gone into extensively. The idea of a central power and heating station for cities was brought forward, and a very interesting discussion followed. Some of the advantages of such a central plant set forth included the delivery of a large proportion of the whole coal supply of the city at this station, the value of the development of producer gas and electricity for light, heat and power, and also for many metallurgical purposes, such as smelting furnaces, steel furnaces, blacksmiths, etc. The removal of all ash and furnace refuse from one point was another advantage claimed for the central station idea. The convention took a positive stand against political interference with the work of municipal smoke prevention departments, and passed a resolution unanimously declaring its opposition to the removal of smoke inspectors for political reasons, declaring such to be a step backward in the movement for smoke elimination. The convention also took action to have a uniform smoke abatement ordinance drawn and adopted by the association, with the ultimate design of having all cities adopt the same measure. If this is done it is expected a standard will be established for determining violations based on the experience of practical study, and upon which State laws may be secured. The discussion of the question of railroad smoke brought out many practical points about that particular phase of the abatement problem. The question was discussed principally by railroad smoke inspectors. The main thing brought out in connection with it was that the proper and permanent solution of this phase of smoke nuisance is the electrification of the railroads. Newark, N. J., was selected as the next meeting place.

**American Peat Society.**—The fourth annual meeting will be held in Ottawa, Canada, July 25-27. This city was chosen as the meeting place largely for the purpose of affording the members the opportunity of examining the fuel testing station at Ottawa, operated by the Canadian government, which is equipped for the testing of power purposes for peat only. The power plant consists of a double zone peat gas producer, wet coke scrubber, tar filter and dry scrubber, a four-cycle single acting Koerting gas engine of 60 effective horse power, a 50 K. W. direct connected Westinghouse direct current generator, and a resistance stand for absorbing energy generated. The power generated at this station will later be utilized in running the machinery of a metallurgical laboratory. Many plants of this description are in commercial operation in Sweden and Germany, where the economy and reliability of gas power plants utilizing peat has been amply demonstrated. The peat for the operation of the producer will be supplied from the peat bog owned by the Canadian government, near Caledonia Springs, about 40 miles distant from Ottawa, and has an area of about 300 acres. The Anrep process for manufacturing air-dried peat is used, 30 tons per day being handled.

**Central New York Volunteer Firemen's Association.**—The seventeenth annual convention, tournament and parade will be held in Auburn, July 26-28. Former Chief Joyner, of Atlanta, Ga., who is also ex-Mayor of the city, will speak on modern methods of fire fighting; John L. Kyne, president of the New York State Firemen's Association, will also make an address, as, likewise, will many other experts in the fire service, among whom will be the Rev. L. J. Christler, a former chaplain of the association, who will come all the way from his mission work in the Milk Valley, Montana, to greet his many friends in the department. The tournament will be exciting and of itself worth the trip to Auburn, while the exhibit of fire apparatus and appliances and the tests of a big automobile combination chemical and fire engine will be both instructive and interesting.

### Calendar of Meetings

July 25-30. **North Carolina State Firemen's Association.**—Annual Tournament, Newbern, N. C.

July 26-27. **Western New York Volunteer Firemen's Association.**—Tenth Annual Convention, Lockport. Charles F. Foley, Secretary, Lockport, N. Y.

July 26-28. **Central New York Firemen's Association.**—Convention, Auburn, N. Y. Thomas Knobel, Secretary, Homer, N. Y.

July 26-28. **Nebraska State Firemen's Association.**—Tournament, York, Neb.

July 26-28. **Ohio Electric Light Association.**—Annual Convention, Cedar Point, Ohio.—D. L. Gaskill, Secretary, Greenville, Ohio.

July 28-29. **Chattanooga, Chataqua and Erie Counties (N. Y.) Volunteer Firemen's Association.**—Second Annual Convention, Fredonia, N. Y.—B. F. Simons, Secretary, Fredonia, N. Y.

July 28-29. **Texas Mayors' Association.**—Tenth Annual Convention, Tyler. Mayor W. D. Davis, Fort Worth, President; J. T. Lack, Tyler, Secretary.

July 28-30. **National Good Roads Congress.**—Annual Convention, Niagara Falls.—Arthur C. Jackson, President, Chicago, Ill.

August 2-5. **Iowa State Firemen's Association.**—Tournament, Red Oak, Iowa.

August 17-20. **National Firemen's Association.**—Thirteenth Annual Convention, Rochester, N. Y. Bert Fisher, Secretary, 3812 Wabash ave., Chicago, Ill.

August 23-26. **League of American Municipalities.**—Annual Convention, St. Paul, Minn.—John MacVicar, Secretary, City Hall, Des Moines, Ia.

August 23-26. **International Association of Fire Engineers.**—Annual Convention, Syracuse, N. Y.—James McFall, Secretary, Roanoke, Va.

September 6-8. **Pacific Coast Association of Fire Chiefs.**—Annual Convention, Stockton, Cal.—A. A. Sumner, Secretary.

September 6-9. **International Association of Municipal Electricians.**—Fifteenth Annual Convention, Convention Hall, Rochester, N. Y.—Frank P. Foster, Secretary, Corning, N. Y.

September 21-23. **New England Water Works Association.**—Annual Meeting, Rochester, N. Y.—Willard Kent, Secretary, Narragansett Pier, R. I.

October 10-14. **American Street and Interurban Railway Association.**—Annual Convention, Niagara Falls, Ontario.—H. C. Donecker, Secretary, 29 West 39th st., New York, N. Y.

October 11-16. **American Society of Municipal Improvements.**—Seventeenth Annual Convention, Erie, Pa.—A. Prescott Folwell, Secretary, 239 W. 39th St., New York, N. Y.

November 14-18. **National Municipal League.**—Annual Meeting, Buffalo, N. Y. Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

### PERSONALS

BBYAN, Wm. H., Chicago, Ill., has been certified for the position of Chief Engineer of the Board of Education of Chicago by the Civil Service Commission of that city.

**COMFORT, COL. SILAS E.** vice-president of the Pennsylvania Military College, who was recently retained by the City of Chester as consulting engineer on extensive municipal improvements, was accidentally drowned, after a heat stroke, last week.

**DONMOYER, RUDOLPH W.**, South Bend, Ind., has been named as a member of the Board of Water Works Trustees by Mayor Charles L. Goetz, succeeding Lafayette LeVan, resigned.

**DUNCAN, A. M.**, Elizabeth, N. J., has been elected president of the Board of Police and Fire Commissioners, succeeding William O'Leary, term expired. Sol P. Huntington was re-elected secretary and V. I. Minahan was seated as the new member of the board.

**GRiffin, J. H.**, manager of the Vincennes Light and Power Company, Vincennes, Ind., has resigned to become manager of a plant at Oskaloosa, Iowa. He is succeeded by Harry D. Clay, former assistant manager of the gas company at Saginaw, Mich.

**GRiffin, WENTWORTH E.**, Kansas City, Mo., a lawyer who has been Superintendent of Streets since Mayor Darius Brown assumed office, has been appointed Chief of Police. Frank Snow, who has been acting chief since the election of Governor Hadley, will resume his rank as captain.

**HARVEY, JOHN.** Carlisle, Ky., has been elected Chief of Police by Council, succeeding Robert George, resigned.

**HARRIMAN, GEORGE W. R.**, Boston, Mass., has been appointed Consulting Engineer to assist the Superintendent of Streets, Boston, in the solution of transit problems.

**KIMBALL, GEORGE H.**, Detroit, Mich., has been engaged as Consulting Engineer in the work of eliminating grade crossings.

**KUICHLING, EMIL.** New York, Consulting Engineer, is preparing a report on the Schenectady, N. Y., water works.

**LOMASNEY, JOSEPH P.**, Boston, Mass., State Senator, has been named as a member of the Board of Health by Mayor John F. Fitzgerald to succeed the late Frederic O. North.

**MATHEWS, FRANK C. E.** has been appointed City Engineer of Taylor, Texas. Mr. Mathews has been Assistant City Engineer of Knoxville, Tenn., for the past four years.

**McGOVERN, LIEUT. JOSEPH.** Baltimore, Md., has been promoted to captain of detectives, vice Capt. A. J. Pumphrey, resigned. He was appointed a member of the Police Department May 15, 1885.

**MCNEILL, WILLIAM A.** Chief of Police of Revere, Mass., has been removed from office by the Selectmen "for the good of the service," and Lieut. Claire P. Chainey is acting chief.

**OLSON, O. H.** Stillwater, Minn., J. J. Eichten and J. H. Ward have been appointed members of a commission to manage the water works under municipal ownership.

**ROGERS, T. F.** Norfolk, Va., has been appointed Superintendent of the Street Cleaning Department, succeeding Daniel H. Farquharson.

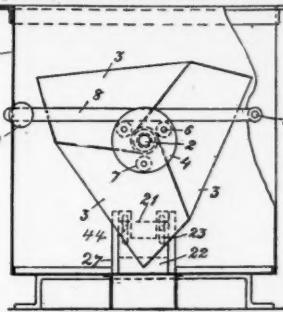
**SEILER, GEORGE.** Covington, Ky., has been appointed City Auditor, succeeding William S. Gould.

**SHINN, EVERETT.** New York, N. Y., has been asked to submit suggestions for mural decorations in the new City Hall.

### PATENT CLAIMS

961,926. **APPARATUS FOR PURIFICATION OF WATER.** Anders Alsson Andberg, Malmö, Sweden, assignor to Aktiebolaget Merkantila Ingenjörerbyrån, Stockholm, Sweden, Serial No. 520,363.

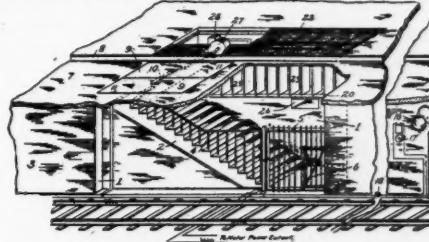
A rotary shaft provided with a series of buckets for receiving the liquid to be purified and carrying a correspondingly constructed cam-wheel and series of projecting parts, in combination with an out-



let valve opened at regular intervals by said cam, a weighted bar in contact with said projecting parts to hold said shaft against turning, means for supplying a purifying solution to said valve, means for supplying a liquid to said buckets and thereby turning said shaft, a receiver for said liquid and said solution and an outlet and overflow gate arranged to hold a body of water in position to resist the turning of said shaft, the said gate being adjustable to regulate the degree of such resistance and consequently the amount of water receivable in the bucket before turning the shaft, substantially as set forth.

962,145. **SUBWAY CONSTRUCTION.** Edward B. Hess, New York, N. Y. Serial No. 554,986.

A railroad subway comprising an emergency outlet for passengers leading from



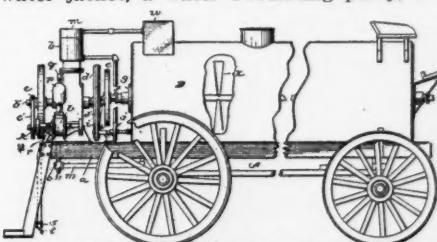
the subway to an exit at the surface above, a closure normally closing the exit from ingress and egress, and closure locking means located on the inside thereof and adapted to be readily operated to unlock the closure by any one seeking exit.

962,887. **GARBAGE-CAN RECEPACLE.** Thomas P. Bolger, Gloucester, Mass. Serial No. 412,345.

A garbage receptacle provided with a collar at its upper edge, a pair of oppositely hinged covers of different sizes connected to said collar, the larger cover being provided with a cut-away portion to receive the smaller cover, a receptacle mounted in said receptacle for holding a disinfecting liquid, a spout connected to the disinfecting receptacle adjacent its bottom, a piston mounted in said receptacle of a smaller diameter than the receptacle, a piston rod pivotally connected to said piston and a crank arm carried by the smaller cover connected to said piston rod.

962,728. **APPARATUS FOR SATURATING THE GROUND WITH OIL.** Joseph E. Ward, Long Beach, Cal. Serial No. 504,618.

In combination with a vehicle having an oil tank thereon, a gas engine having a water jacket, a water circulating pump, a



water tank located on said oil tank, said circulating pump being operated by said engine, forcing nozzles, an oil forcing pump operated by said engine, connections between said nozzles, pump, and oil tank including a valve, an agitator in said oil tank, also operated by said engine.

## MUNICIPAL APPLIANCES

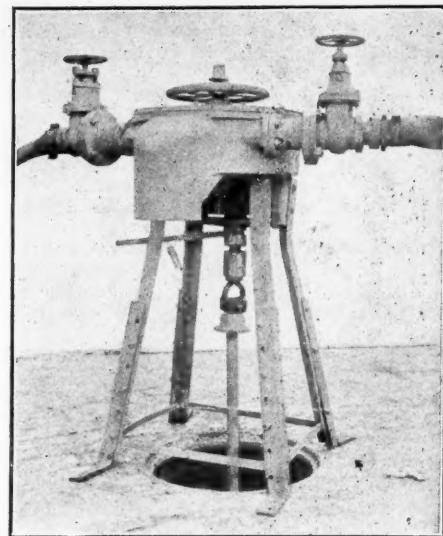
### Sewer Rods

THE sewer rods made by the Boston Hook Sewer Rod Company, 415 Dorchester avenue, Boston, Mass., and 1616 Locust street, St. Louis, Mo., are now being made larger and stronger, both in couplings and rods, than formerly. Experience has showed the weak points and they have been strengthened in vital parts. The angle at which they are connected up is more convenient than formerly. The connections are of the best malleable casting metal. The wooden portion is made of white wood, which will float, or of oak or hickory. The rods come in 3, 3½ and 4-foot lengths, and measure  $1\frac{1}{8}$  by  $\frac{7}{8}$  in cross-section. If desired, the couplings are furnished of brass. They may also be provided with wires running the en-

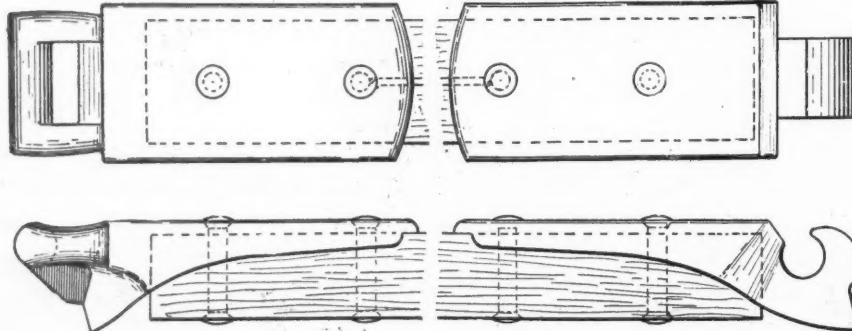
will provide for the needs of the city for some time to come.

As will be seen by the photograph, which was taken in the shops of Allis-Chalmers Company, this pumping engine embodies the most advanced ideas in the engine builders' art. Tubular frame, Corliss valves for high pressure and poppet valves for low pressure steam; jacketed cylinders, and outside packed plungers are some of the points which will attract the engineer's interest. This style of pumping engine is claimed to develop a duty which cannot be equaled by any other type of engine.

The illustration at the bottom of this page shows the steam end of the pump, the water end being below the main floor.



WATER-MOTOR FOR OPERATING VALVE



SEWER RODS WITH RECTANGULAR CROSS SECTIONS

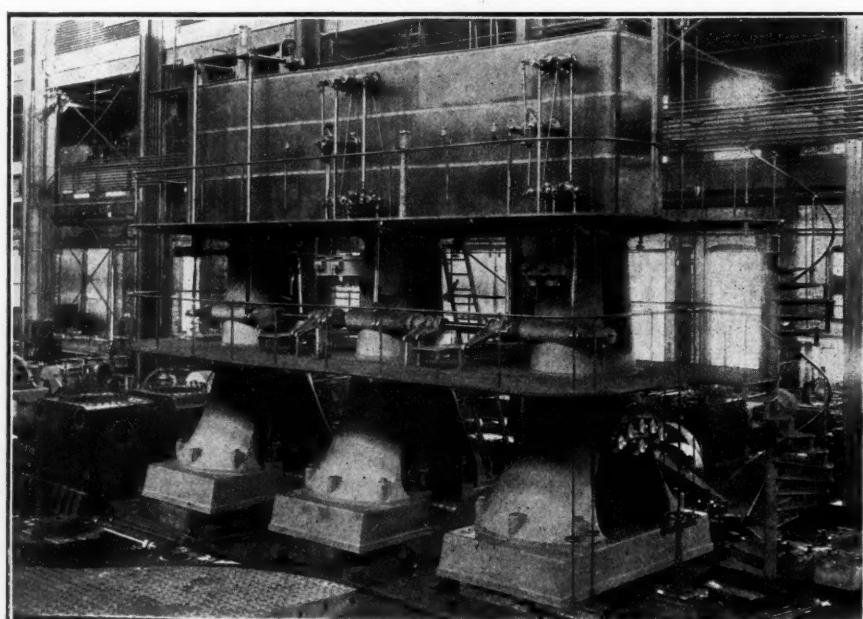
tire length of the rod as a safeguard in case a rod should break in the sewer. The illustration shows the construction of the joint as well as the general appearance of the rod. Besides this device, the company makes round rods, pipe rods, screw-connected rods, as well as extra large and small rods of the design illustrated. Other devices for sewer, catch basin and street cleaning are also manufactured by the same company, such as reinforced pails, hose, screw augers, rope ladders, frames for manholes and portable iron frames for closing streets.

### Pumping Engine for Grand Rapids

The city of Grand Rapids, Mich., has done more perhaps in the way of municipal improvements in the last few years than any other city of the size in the country. The straightening and deepening of the river, with the building of the retaining walls, was a big undertaking in itself. Then came the construction of the intercepting sewers and pumping stations to free the river from pollution. Now the waterworks pumping equipment is being added to, and it is probably only a short time before the waterworks and electric light stations are housed in a single station.

The new equipment under construction at the pumping station is a vertical triple expansion, condensing, crank and fly-wheel Allis-Chalmers Corliss pumping engine. This has steam cylinders, 28, 50 and 74 inches in diameter by 48 inches stroke, with pump plungers 26 inches in diameter. This pump will deliver 12,000,000 gallons per 24 hours against a head of 251 feet, and

and another line carries away the overflow. The lack of such a device as this is apparent from the damage that has been done in breaking valve stems when a quick shut-off is necessary. The sediment-coated threads of the stem of a valve that has not been closed in a long time are the cause of the trouble. The usual mode of procedure when the sudden bursting of a main requires prompt attention is to send a gang of men on the "double quick" to the nearest valve. Increased leverage applied to the solid shoulder of sediment built up in the first few turns is liable to result in a broken stem. In this case the same tactics are tried with the next valve, and so on until a shut-off has been effected. Heavy damage may be the consequence, or at least great inconvenience caused by shutting off the water over unnecessarily large areas. The installation of hydraulic motors enables one man in the average city to inspect all the main valves frequently and see that they are always in condition for ready operation. The manufacturers state the approximate time for opening or closing a 30-inch or 36-inch valve as from three to five minutes, with a proportionate time for other sizes.



STEAM END OF 12,000,000 GALLON PUMPING ENGINE FOR GRAND RAPIDS, MICH.

## Gasoline Sprayer

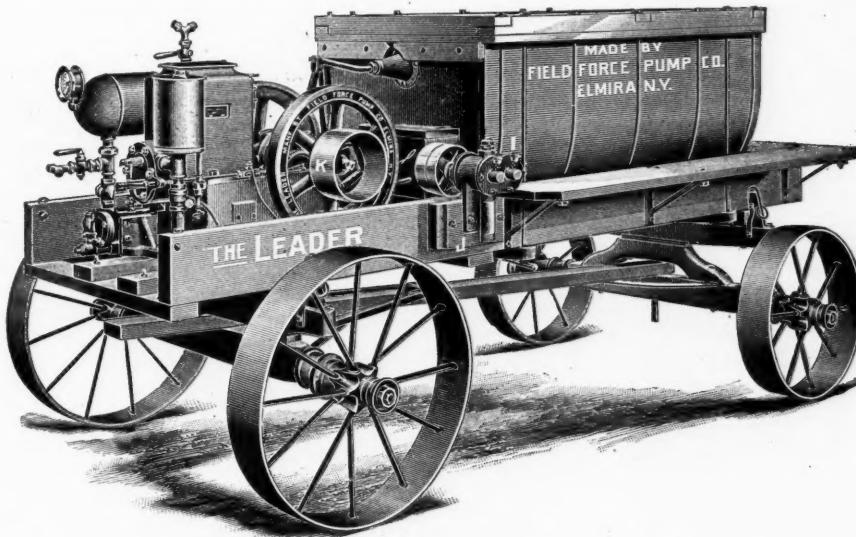
THE Leader Gasoline Sprayer is a portable horse-drawn spraying outfit suited for use in city parks, manufactured by the Field Force Pump Company, Elmira, N. Y. The apparatus consists of a Leader engine, with special 3-inch by 8-inch brass-lined pump and a mixing trough for the chemical solution, all mounted on a four-wheeled truck with wide-tired iron wheels. The Leader engine is of the horizontal type, 3½ horsepower, with four cylinders. It has a hit-or-miss flywheel governor. It is claimed to be very economical, using one gallon of gasoline in ten hours for each horsepower actually used. It has jump-spark ignition. The cylinders are 5 x 5½, the normal speed 380 revolutions per minute, producing a guaranteed 3½ actual brake horsepower. In reality it is said to be underrated, and has ample reserve for all possible requirements of this capacity engine. The cylinder, cylinder head and valves are entirely water-jacketed. All parts are accessible and so simple in their mechanism that their purposes are easily understood. The piston is of the trunk pattern, extra long, and provided with three perfectly-fitted lapped joints. The piston pin is made of machinery steel, the crankshaft is a drop forging, and both have extra wide

## Yellow Pine Creosoted Blocks

The merits of yellow pine creosoted blocks for floor coverings and between car tracks are explained in a pamphlet issued by the Yellow Pine Manufacturers' Association, Wright Building, St. Louis, Mo. This association, by the way, is not engaged in the buying or selling of yellow pine lumber, or manufactured products of it, but acts as a bureau of information for any one desiring information. Evidence is presented in the pamphlet tending to show from actual instances that creosoted wood block floors made of yellow pine have excellent fire resisting properties. The material is recommended for paving the yards of municipal buildings, such as school yards, and for floors of fire engine houses. Some account of its use in paving street car tracks and bridges is given and detailed specifications for yellow pine creosoted block flooring on plank or concrete foundation are also added.

## Watch Dog Water Meter

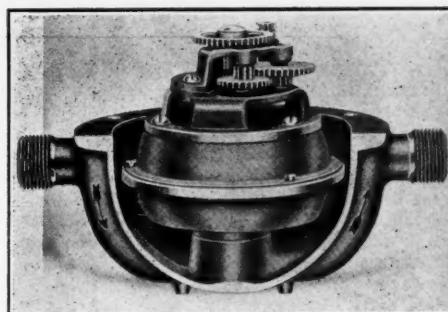
THE "Watch Dog" water meter, manufactured by the Gamon Meter Company, 75 Hamilton street, Newark, N. J., is claimed to be an improvement in range and efficiency over the ordinary house meter. These qualities are believed to depend largely upon the



GASOLINE SPRAYER FOR CITY PARKS

bearings. The flywheels are large and well balanced, the counterweights being placed on the crankshaft. The connecting rod is adjustable at both ends; the crank pin being babbited, and the piston end fitted with a split bronze bushing. The important bearings have compression grease cups, and the cylinder a sight-feed lubricator. The pump has a 2½ by 8-inch brass-lined cylinder. It has an extra large air chamber and connections for four leads of hose. It has a blow off valve and pressure gauge, which enables the operator to carry any pressure desired, and is regulated by a hand wheel. The pump is connected directly with the engine, both being mounted on a strong base of 36 by 48 inches, and is neat in appearance, compact and strong. The pump can be furnished with a 3 by 8 inch brass cylinder when greater capacity is required; it will then supply, it is claimed, fifteen nozzles a pressure of 200 pounds. The mixing tank is half round, pine staves with machined joints. The agitator has paddles bound with steel.

speed at which the meter is forced to run. For this reason in the "Watch Dog" meter the area of the measuring chamber has been increased until for one cubic foot of water passed, the piston only makes 235 revolutions. The measuring chamber is the heart of the meter; for this reason it is machined with great care, and the piston disk is fitted with great accuracy, some of the clearances being only one-five hundredths of an inch. When, as is ordinarily the case, the outside of the chamber is closely fitted to the main casing, either in the vertical or horizontal planes, and held in place by screws or clamping, the slightest warp in any of the seats causes the chamber to spring and binds the disk. Merit is claimed for the joint formed between the pedestal in the lower casing and the disk chamber hub. It is just an ordinary metal joint, screwed into a ¾-inch pipe tap thread, the land around the top of the thread being about one-quarter of an inch. This small area to be made water tight in connection with



WATCH DOG METER

a double bottom in the disk chamber, renders it absolutely impossible to cramp the piston at any time. To assemble or take the disk chamber out it is simply necessary to use a screwdriver as a lever and unscrew or tighten the joint. The chamber is circumferentially free from the casing, allowing a free passage for water. The strainer fits tightly over the pedestal and against the wall of the casing, having an effective area of over twenty-six times the area of the pipe, heavy particles falling by gravity to the bottom of the containing case. The gear train has all the bearings bushed with hard vulcanized rubber and has a reduction of 168 to 1. Special merit is claimed for the stuffing box, which is internal and kept in place by the pressure within the casing. The joint is formed by a hard rubber plug ground into a bronze bearing. The higher the pressure, the tighter the joint. The flange bolts have a special device which distributes the pull upon four points instead of under the head of the screw only, thus avoiding springing.

## Dual Pneumatic Tires for Safety in Fire Apparatus

The perfection of motor-driven apparatus that drives at high speed has brought into vogue the pneumatic tire as fire apparatus equipment. This in turn has subjected the apparatus to accident and delay through puncture and other troubles happening to the tires. The Firestone Tire & Rubber Co., who have always made a specialty of fire apparatus equipment, have perfected a dual pneumatic tire in connection with their quick detachable, demountable rim, for reducing to the smallest degree the risk of accidents or delay in reaching fires. The dual tire is formed by mounting two pneumatic tires side by side on each of the rear wheels. Most punctures and other tire mishaps occur to the rear wheels, where the strain is greatest. This leaves the second tire to carry the load until a convenient opportunity to repair. Meantime the car goes right ahead without slackening speed. The spare inflated tires, which are carried on the side of the car, may be used on either the front or rear wheels, and provide the quickest means for tire changes.



BOTH TIRES REMOVED, READY TO PUT INFLATED TIRE ON INNER SIDE

## TRADE NOTES

**Cast Iron Pipe.**—Chicago: There have been a number of fair-sized municipal lettings. Quotations: 4-inch, \$28; 6 to 12-inch, \$27; 16-inch and up, \$26. Birmingham: A satisfactory amount of small business is being booked. Quotations: 4 to 6-inch, \$23; 8 to 12-inch, \$22; over 12-inch average, \$21. New York: Trade is dull for this season. Quotations: 6-inch, car-load lots, \$24.50 to \$25.

**Lead.**—Some outside sellers are asking 2½c. more than the price made by the A. S. & R. Co. Quotations: New York, 4.40c.; St. Louis, 4.25c.

**Large Riehlé Testing Machine.**—The Riehlé Brothers Testing Machine Company, Philadelphia, Pa., has just shipped the largest screw power testing machine it has ever built to the Lehigh University, South Bethlehem, Pa., for its new engineering laboratory. The machine complete weighed 150,000 pounds, will take in specimens 28 feet long, and has a capacity, on two screws, of 800,000 pounds. On June 20 an elaborate test of the machine was made at the company's works, among those in attendance being John Fritz, President Drinker, Prof. F. C. McKiblen and G. A. Chandler, of Lehigh University; W. A. Lathrop, President of the Lehigh Coal & Navigation Company; Professor Kavanaugh, of the University of Minnesota, and a number of other prominent engineers. The machine was tested to its fullest capacity, and met most satisfactorily all requirements.

**Smoke Preventer.**—G. H. Scharf Company, Ypsilanti, Mich., has issued a catalogue illustrating and describing the operation of the Scharf automatic smoke preventer and fuel economizer, which is said to be automatic in action, easy to operate, economical in the use of fuel, and reliable. This device is operated by the opening of the fire door for firing and gives a strong draft for the new fire. The smoke preventer is shown alone and in combination with a boiler, and there are a number of views of plants where it has been installed.

**Recording Instruments.**—The Bristol Company, specialists in Recording Instruments, Waterbury, Conn., has issued a handsomely bound and printed illustrated index of recording instruments for pressure, temperature and electricity. It is stated that the publication is not intended as a catalogue, but simply a series of illustrations of the most important Bristol instruments, with partial explanation of the instruments and their application. Bulletins cataloguing the various instruments will be sent on request to persons interested.

**Torn Cement Sacks.**—The Universal Portland Cement Company last year mended 1,318,448 cement sacks for which it made no charge to its customers. So much bad work is done by contractors in mending the sack, permanently damaging it, that the company prefers to do this work without charge.

**Centrifugal Pumps.**—Centrifugal pumping machinery is being specified to such an extent this year that the Erie Pump & Engine Works, Erie, Pa., has had all it could do lately to keep up with the requirements of the trade. This company manufactures a very compact, easily operated type of pump which is adapted to a wide range of service and has found particular favor among mill owners, contractors, etc.

**Smoke Abatement.**—The Dayton Electric Lighting Company has spent large sums of money in its efforts to prevent the emission of smoke from its power house chimneys. It is now engaged in tearing out three boilers, which will be replaced with three 3,000 horsepower boilers of a different pattern fed with automatic stokers. A new concrete chimney will also be built. The company installing the improvements is under \$10,000 bonds guaranteeing that the plant will comply with the smoke ordinance.

**Sawed Stone Blocks.**—R. S. Gilfillan, Kansas City, has a contract for furnishing and laying about 10,000 square yards of sawed sandstone block pavement. The blocks are made at the Bandara quarries, near Redfield, Kan. These are probably the first sand stone paving blocks cut in this manner laid in the United States, and according to statements made by Mr. Gilfillan they answer every requirement of heavy traffic and are smoother than any other stone block pavement. The flag stone is first cut into strips and later into blocks. Machines now in use have a capacity of sixty blocks per minute, and three cars daily are being loaded.

**Derricks.**—The Detroit Hoist & Machine Company, Detroit, Mich., in addition to its pneumatic hoists, is finding an excellent market this season for its various other products, including small engines for use with winches, derricks and other handling machinery. The compressed air appliances of its manufacture are finding a constantly widening market in foundries for construction work, etc., the demand from these sources having been particularly heavy all through the spring and early summer.

**Road Graders.**—The Russell Grader Manufacturing Company, Minneapolis, Minn., manufacturer of road-building machinery, has purchased a site and is having plans prepared for a brick factory building, 80x200 feet, two stories and basement, work upon which will be pushed as fast as possible.

**Glutrine.**—The Street Department of Hartford, Conn., last week began to spread glutrine upon the Maple Avenue State Highway, under the direction and supervision of the State Highway Commissioner. The State furnished the compound, and it is being put on by the city. The Berlin turnpike has been treated with this substance by the Highway Commissioner, and the Maple Avenue State Highway is a continuation of the Berlin turnpike. This is the first time glutrine has been used in Hartford. In appearance it makes an excellent top dressing, and so far has proved very satisfactory on the Berlin turnpike. Deputy Street Superintendent Bennett is in charge of the work.

**Change in Power System.**—It has been definitely decided that the power of the Cohoes Company, of Cohoes, N. Y., is to be changed from water to electricity. A majority of the manufacturers have signified their willingness to co-operate with the Cohoes company in electrifying the power. The work of abolishing the hydraulic canals and establishing a power plant for the generation of electricity from the water power will be begun within the next few months.

**Portland Cement.**—The William G. Hartranft Cement Company, Inc., Real Estate Trust Building, Philadelphia, Pa., has been appointed general sales agent for the entire output of the Penn-Allen Cement Company, of Penn-Allen, Pa.

**Fire Engines.**—An American consular officer in an Asiatic country reports that American manufacturers of fire extinguishing apparatus who desire to extend their foreign sales will do well to look to his district as a likely field. Along with other problems of municipal improvement which the local administration faces is that of providing adequate fire protection for the empire's crowded cities. Modern fire equipment—engines, hose and gear—will eventually be introduced in cities which now lack facilities for preventing the spread of flames. For further information address 5197 Bureau of Manufactures, Washington, D. C.

**Slow Rusting Iron.**—There is a demand in Australia for metal pipes that will resist rust, according to Vice-Consul-General Henry D. Baker, of Sidney. The Minister of Works for New South Wales has had his attention called to experiments in the production of slow-rusting iron at commercial prices, which have been carried out by the American Rolling Mill Company, of Middletown, O., by eliminating manganese and other impurities by a basic open-hearth furnace. A small supply of tubing will probably be ordered from this company for experimental purposes, and if the results are successful some large orders may be expected in the future. This is a matter that will interest managers of water works much nearer the scene of the experiments than Australia.

**Asphaltoilene Sprayer.**—The Good Roads Improvement Co., First National Bank Building, Cincinnati, O., has devised a special equipment for applying asphaltoilene to roadways by the barrel, to meet the requests for oil in small amounts to be used by private individuals, hotels, etc., desiring to treat comparatively small areas. The equipment consists of a special double-acting oil force pump set over the bung of the barrel, a 2-foot section of 1½-inch suction pipe, 25 feet of special oil-proof hose, with brass couplings, an adjustable brass oil sprayer, a skid or frame with adjustable clamps, equipped with wrought-iron hooks to fit any size of barrel. With a man at the pump and one with the sprayer they can oil 2000 or more square yards per day.

**Curtis Turbine Installations.**—An attractive publication was recently issued by the General Electric Company under the above title, and contains upward of fifty illustrations of installations of Curtis steam turbine-generators of various capacities. The number of this publication is 4732. Although these machines were introduced less than ten years ago, the capacity sold in America alone now exceeds one and one-quarter million of kilowatts.

**Packing.**—The New York Belting and Packing Co., Ltd., 91 Chambers street, New York, N. Y., has published the 1910 edition of the Engineers' Catalogue, showing high-grade packing for all conditions of service. An idea of the immense variety of packings made by the company may be obtained from the fact that the catalogue is made up of 71 pages, of which the index occupies four.

**Clay Products.**—The Washington Brick, Lime and Sewer Pipe Company is one of the new industries of Dishman, Wash. The products of the plant will be sewer pipe, conduits, flues and hollow building material, according to the statement of Secretary S. J. Boal, who says the plant is the best equipped for this kind of work of any plant west of the Mississippi River.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>STREET IMPROVEMENTS</b>				
Ohio	Napoleon	July 22, 10 a.m.	Improving County roads, 10 contracts.	Board of County Commissioners.
Ohio	Cincinnati	July 22, noon.	Improving Hamilton and Montgomery Pikes.	Fred Drehs, Clk. Co. Comrs.
Virginia	Roanoke	July 22, noon.	Bldg. granolithic sidewalks in sundry streets.	W. L. Crafts, City Clerk.
Ohio	Caldwell	July 22, noon.	Paving 7,750 sq. yds., curb 4,500 ft.; \$300 check.	Hugh F. Neuhart, Village Clerk.
Massachusetts	Taunton	July 22, 4 p.m.	Bldg. section of highway known as Caswell street.	Wm. S. Woods, Chm. St. Com.
Indiana	Indianapolis	July 22, 10 a.m.	Improve 30th st., conc. curb and gutter.	L. E. Snyder, Sec'y Park Comrs.
Illinois	Cairo	July 22, 8 p.m.	Paving with brick, 2 streets, 27,965 sq. yds.; cost, \$47,677.02 and \$19,343.69.	W. B. Thistlewood, City Engineer.
Minnesota	Hallock	July 23, 1 p.m.	Bldg. State road: grading, 57,661 cu. yds.; ditching, 2,300 cu. yds.; nine 30x24-in. and 20x24-in. concrete culverts.	C. J. Hemmingson, County Auditor.
Washington	Index	July 23, 9 p.m.	Clearing and grading streets and avenues in Imp. Dist. No. 2.	H. F. Wilcox, Town Clerk.
Massachusetts	Dracut	July 23, 10 a.m.	Bldg. 6,550 ft. road.	L. S. Gould, Chm. Co. Comrs.
South Carolina	Greenville	July 23.	Paving 29,000 sq. yds., brick, wood block, asphalt, bitum.	W. E. Beattie, Chm. Pav. & Swr. Com.
Massachusetts	Boston	July 23.	Paving bet. rails of crane track at navy yard; \$3,000.	Commandant, Navy Yard.
Wisconsin	Racine	July 23, 10 a.m.	Asphalt paving, 15,200 sq. yds.; comb. curb and gutter, 7,746 ft.	P. H. Connolly, Chm. Bd. Pub. Wks
Wisconsin	Sparta	July 23, 2 p.m.	Improving streets.	L. H. Conger, Chm. St. Com.
Illinois	Sidell	July 25.	Improving streets; cost, \$30,000; W. E. Winn, Engr., Danville.	W. E. Cathcart, Pres. Bd. Loc. Imp. Board of Public Works.
Tennessee	Le Follette	July 25.	Bldg. concrete sidewalks, also a sewer.	S. J. Brown, City Secretary.
Texas	Amarillo	July 25, 3 p.m.	Paving 80,000 sq. yds.; four materials.	
West Virginia	Huntington	July 25, 1 p.m.	Grading, paving, etc., 7 streets; 56,500 sq. yds. paving, 24,000 lin. ft. curb; A. P. Maupin, City Engineer.	
Massachusetts	East Cambridge	July 25.	Bldg. 6,550 ft. rd. at Dracut; 1,350 ft. at Chelmsford.	John Coon, Comr. of streets.
Illinois	Watseka	July 25.	Bldg. 1.5 miles Tarvia macadam road on 3d street.	Levi S. Gould, Chm. Co. Comrs.
Illinois	Peoria	July 25.	Resurfacing North Madison ave. with asphalt; cost, \$45,000.	G. C. Houston, City Engineer.
Illinois	Chillicothe	July 25.	Bldg. 20,000 sq. ft. concrete sidewalk, 10,000 ft. crosswalks.	Clay Belsley, City Engineer.
Michigan	Muskegon	July 25.	Improving N. 1st, N. 3d and Concord st.; cost, \$1,510.	Chas. Daugherty, Chm. Pub. Imp. Com.
Iowa	Waterloo	July 25.	Asphalt paving, 25,000 sq. yds.	B. H. Tellman, City Comptroller.
South Dakota	Yankton	July 25.	Bldg. sidewalk on Green street.	C. T. Wilson, City Engineer.
Ohio	Steubenville	July 25, noon.	Stone block paving, curb, retaining wall, etc., W. Market st.	J. W. Summers, City Auditor.
Wisconsin	Watertown	July 25, 2 p.m.	Grading, gravel walks, bridge, etc., in ward park.	R. L. Freudenberger, Clk. Dir. P. Ser.
Illinois	Chicago	July 25, 11 a.m.	Improving various streets.	Arnold Krafft, City Engineer.
New York	Ft. Ontario	July 25, 11 a.m.	Bldg. gravel roads at fort.	Albert F. Keeney, Pres. Bd. Loc. Imp.
New York	New York	July 25, 2 p.m.	Furn. 30,000 gals. No. 6 paving cement, 1,500 cu. yds. gravel.	Lt. R. D. LaGarde, Constr. Q. M.
Michigan	Grand Ledge	July 25, 6 p.m.	Brick paving on concrete bases, Bridge st.; \$10,000 bond.	Geo. McAneny, Pres. Manh. Boro.
New York	New Brighton, St	July 26, noon.	Bldg. cement crosswalks and sidewalks, various streets.	F. B. Whipple, City Clerk.
Ohio	Youngstown	July 26, 10 a.m.	Macadamizing 6,800 ft. road.	Geo. Cromwell, Boro. President.
Ohio	Cincinnati	July 26, noon.	Bldg. concrete driveways, walks, etc., New General Hospital.	F. C. Allen, Township Clerk.
Ohio	Bryan	July 26, noon.	Grading, bit. macadam., 1.55 miles, Jefferson twp.; \$9,968.	E. L. Kennedy, Clk. Hospital Comrs.
Illinois	Berwyn	July 26, 8 p.m.	Bldg. concrete sidewalks on Maple ave. and other sts., \$21,230.	State Hwy. Comr. C. of Co. Comrs.
Ohio	Defiance	July 27, noon.	Grading, macadamizing, 1 mile, Noble twp.; \$5,167.	Geo. H. Norton, Sec'y Bd. Loc. Imp.
Rhode Island	East Providence	July 27, 11 a.m.	Grading, surfacing, bldg. bridge, etc.; Barrington Parkway.	State Hwy. Comr. C. of Co. Comrs.
Maryland	Baltimore	July 27, noon.	Bldg. 5 sections state highway in city and county, aggregating 8.34 miles, with brick, pitch, macadam or asphalt.	F. H. Peckham, Pres. Park Comrs.
Nevada	Ely	July 28.	Bldg. 6,250 ft. macadam and asphalt highway.	J. M. Tucker, Chm. Roads Coms.
New York	Utica	July 28, 9 a.m.	Paving 16,000 sq. yds. parkway extension from Elm street.	F. D. Oldfield, County Clerk.
Ohio	Dayton	July 29, noon.	Paving 36,345 sq. yds. curb, etc., 6 streets, any material.	W. H. Morton, Sec'y Park Bd.
Indiana	South Bend	July 29, 10 a.m.	Grading So. Mich. st., from Ewing ave. to Leefer road.	J. C. Ely, Dir. Pub. Service.
Ohio	Cincinnati	July 29, noon.	Resurfacing Reading pike in Sycamore, Cleves-Dugan Gap road in Miami, and Hill road, Colerain township.	Otto C. Bastian, Clk. Bd. Pub. Wks
Utah	Salt Lake City	July 29.	Paving, curb and gutter, Exten. No. 67, 2d West st.	Stanley Struble, Pres. Co. Comrs.
Kansas	Ft. Leavenworth	July 30, 11 a.m.	Bldg. roads, walks, etc., at fort.	H. G. McMillan, Chm. Bd. Pub. Wks.
Wisconsin	Racine	July 30, 10 a.m.	Asphalt paving, 10,371 sq. yds.; comb. curb and gut. 5,547 ft.	Capt. Wm. D. Davis, Q. M.
Montana	Ft. Missoula	July 30, 9 a.m.	Bldg. concrete sidewalks and curbs in fort.	H. B. Connolly, Chm. Bd. Pub. Wks.
Illinois	East St. Louis	July 30, noon.	Brick paving, 8,420 sq. yds. on 6-in. concrete and 2-in. sand cushion, 4,860 ft. 5x20-in. sandstone curb, sewers, excav., etc.	A. B. Shattuck, Constr. Q. M.
Illinois	Decatur	Aug. 1.	Vit. block paving on 4-in. concrete, 7,975 sq. yds.; \$18,156.	W. J. Crocken, City Engineer.
Florida	St. Augustine	Aug. 1, 9 a.m.	Bldg. public highway.	A. B. Alexander, City Engineer.
Indiana	Danville	Aug. 1.	Bldg. 14,560 lin. ft. road, Union; 9,341 ft., Washington twp.	C. M. Milburn, County Engineer.
Indiana	Vernon	Aug. 1.	Bldg. 2.5 miles gravel road in Campbell twp.	Wm. N. Nichols, County Auditor.
Indiana	Huntington	Aug. 1.	Bldg. highway on line between Union and Rock Creek twp.	T. L. Thomas, County Auditor.
Indiana	Jeffersonville	Aug. 1.	Grading, draining, graveling 3,607 miles Brownstown road.	John W. Weaver, County Auditor.
Illinois	Colona	Aug. 1.	Bldg. 1,350 ft. concrete sidewalks.	Peter Nachaud, County Auditor.
Illinois	Decatur	Aug. 1.	Vit. block on 4-in. concrete, 7,975 sq. yds.; cost, \$18,156.	Sidewalk Com. of City Council.
New York	Albany	Aug. 1, 1 p.m.	Bldg. 10,22 miles, 8 roads, also repair, etc., 4 roads.	A. B. Alexander, City Engineer.
Indiana	Bluffton	Aug. 1, 2 p.m.	Bldg. 3 macadamized roads.	S. P. Hooker, Chm. State Hwy. Com.
Indiana	Salem	Aug. 1, 3:30 p.m.	Bldg. Bee Line road, Washington twp.; cost, \$13,554.	O. D. Garrett, County Auditor.
Iowa	Council Bluffs	Aug. 1, 5 p.m.	Paving 14 streets with vit. brick.	Sam'l. G. Ellis, County Auditor.
New Jersey	Elizabeth	Aug. 1, 8:30 p.m.	Paving 5,252 sq. yds. oblong trap block, curb, corners, etc.	A. W. Casady, City Clerk.
Indiana	Vincennes	Aug. 2.	Bldg. a gravel road in Knox County.	N. K. Thompson, Street Comr.
Indiana	Martinsville	Aug. 2.	Bldg. gravel roads in Green and Gregg townships.	J. T. Scott, County Auditor.
New Jersey	Bridgeton	Aug. 2, 2 p.m.	Improving 5.39 miles, Malaga road, Landis twp.: earth excav., 16,480 cu. yds., grub .33 acre, compacted gravel, inc. wings, 9,332 cu. yds., bridges, etc.; W. M. Sharp, County Engineer.	B. E. Thornburg, County Auditor.
Indiana	Vincennes	Aug. 2, 2 p.m.	Bldg. 8,097 ft. gravel roads.	Ben. Erickson, Bd. Freeholders.
New York	Binghamton	Aug. 3, 4 p.m.	Bldg. vit. brick pavement, Henry and Court streets.	J. T. Scott, County Auditor.
Michigan	Holland	Aug. 3, 7:30 p.m.	Brick paving 1,200 yds. on 6-in. conc., 4,600 ft. curb and gutter.	S. W. Murray, Clk. Bd. C. & Sup.
Pennsylvania	Pittsburg	Aug. 3, noon.	Permanent improvement of 4 county roads, 7 miles long.	H. A. Naberhuis, City Engineer.
Ohio	Dayton	Aug. 4, 10 a.m.	Grading and macadamizing 2.64 miles Xenia Pike.	S. D. Foster, County Road Engineer.
New Jersey	Vincentown	Aug. 4.	Bldg. stone road from Smalley's Corner, So. Pemberton.	Frank Munger, Chm. Co. Comrs.
New Jersey	New Brunswick	Aug. 4, 11 a.m.	Grading cut-off of Donnell's Hill, No. Brunswick township.	Wm. T. Joyce, Clk. South Twp.
Indiana	East Chicago	Aug. 5.	Improving 5 streets; costs: \$43,571, \$27,533, \$49,921, \$31,385 and \$43,571; also 20 miles cement sidewalk.	P. H. S. Hendricks, Dir. Freeholders.
Kansas	Ft. Scott	Aug. 5.	Bldg. 22 miles of Kansas City-Ft. Scott road.	C. K. Wallace, City Engineer.
Indiana	Marion	Aug. 5.	Improving 2 miles of roads.	City Commissioners.
Ohio	Cincinnati	Aug. 5, noon.	Improving extension of Struble road, Col. & Springfield twp.	F. Wilson, County Engineer.
Ohio	Mt. Gilead	Aug. 5, 11 a.m.	Improving Gilead Road No. 3.	Fred Drehs, Clk. Co. Comrs.
Indiana	Frankfort	Aug. 6.	Bldg. 15 gravel roads, postponement from July 9.	Clifton Sipe, County Auditor.
Wisconsin	Antigo	Aug. 6, 2 p.m.	Paving with macadam, 4 city blocks.	C. F. Cromwell, County Auditor.
Louisiana	Alexandria	Sept. 6.	Brick paving Gould ave., 11th to Levin sts., gravel on to city line	G. O. Palmeter, City Clerk.
Florida	Pensacola	Aug. 10, noon.	Bldg. 525,000 sq. ft. concrete sidewalks.	I. W. Sylvester, City Engineer.
Texas	Sherman	Aug. 10, 11 a.m.	Bldg. 65 miles macadam roadway in Dist. No. 1.	L. Earle Thornton, City Engineer.
Kansas	Olathe	Aug. 10.	Bldg. Kansas City-Olathe rock road, 18 miles long.	H. R. Wallace, County Auditor.
West Virginia	Huntington	Aug. 11, noon.	Brick paving Maple ave., 26th st. and alley; also sewers.	Bd. Comrs. of Johnson County.
Kansas	Ft. Riley	Aug. 11, 10 a.m.	Bldg. 6,600 sq. yds. macadam, 3,900 ft. concrete driveway and curb, 8,000 ft. concrete walks, 950 sq. ft. conc. crossing, 4,500 cu. yds. grading; 500 ft. 12-in. and 200 ft. 10-in. culvert pipe, 6 concrete catch basins, etc.	John Coon, Supt. of Streets.
Illinois	Decatur	Aug. 15.	Brick paving on concrete, 2 streets; cost, \$27,000.	Capt. W. M. Whitman, Constr. Q. M.
Maryland	Ft. Howard	Aug. 15.	Bldg. macadam roads, concrete walks, etc., at fort.	A. B. Alexander, City Engineer.
				Constructing Quartermaster.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>SEWERAGE</b>				
Indiana.....	South Bend.....	July 22, 10 a.m.....	Bldg. pipe sewer in E. Wayne st., Col. st. to St. Joseph river.....	A. P. Perley, Clk. Dept. Pub. Wks.
Massachusetts.....	Malden.....	July 22, 2:30 p.m.....	Bldg. Sec. 66, exten. No. Metropolitan sewer in Broadway.....	Met. Water & Sewer Bd., Boston.
Ohio.....	Zanesville.....	July 22.....	Bldg. brick and pipe sewers in Vroom; pipe sewer, Luck alley.....	M. L. J. Logsdon, Sec'y Dir. P. S.
Iowa.....	Sioux City.....	July 22, 3 p.m.....	Bldg. 6-in. sanitary sewer on W. 6th st.....	E. O. Wesley, Supt. Streets.
Illinois.....	Libertyville.....	July 22, 6 p.m.....	Bldg. sewer system: 1,565 ft. 12-in., 2,392 ft. 10-in. and 6,015 ft. 8-in. pipe sewer, 37 manholes, 3 flushing connections.....	H. B. Eger, Pres. Bd. Loc. Imp.
Minnesota.....	Biwabik.....	July 23.....	Bldg. sewer and water mains in Shaw ave.....	H. J. Millbrook, Village Clerk.
Ohio.....	Niles.....	July 23, noon.....	Bldg. sewers, Dist. No. 3.....	Director of Service, Caldwell.
Tennessee.....	La Follette.....	July 25.....	Bldg. sewer and concrete sidewalks.....	Board of Public Works.
Indiana.....	Kokomo.....	July 25.....	Bldg. 6 blocks 12-in. vit. pipe sewer in North street.....	Jackson Morrow, City Engineer.
Virginia.....	Roanoke.....	July 26, noon.....	Bldg. sewers in a number of streets.....	W. L. Crafts, City Clerk.
Ontario.....	Toronto.....	July 26, noon.....	Bldg. 1,340 ft. 5-ft. rein. conc. pipe sewer.....	Mayor G. R. Geary, Chm. Bd. Cont.
Alabama.....	Attalla.....	July 26.....	Laying about 6 1-2 miles of sewer pipe, appurtenances, etc., in Wilbur Hill, Gadsden, Engineer.....	L. S. Gray, Town Clerk.
New York.....	Buffalo.....	July 26, 11 a.m.....	Bldg. 4 sewers 18 to 10-in. tile sewer.....	F. G. Ward, Comr. Pub. Works.
Tennessee.....	Union City.....	July 27, 2 p.m.....	Furn. material and building sanitary sewer system.....	J. W. Woosley, City Recorder.
Pennsylvania.....	Norristown.....	July 27, 7:30 p.m.....	Bldg. 8-in. sanitary sewer: S. Cameron, Corson, Boro. Engr.	Chas. C. Rambo, Chm. Sewer Com.
Ohio.....	Canton.....	July 27.....	Bldg. sanitary sewer in Maple ave: 3,100 ft. 8-in. pipe storm sewer, Liberty st., 2,630 ft. 8-ft. 2-ring, 230 ft. 8-ft., 3-ring brick block sewer, 340 ft. 15-in. pipe, etc.....	W. H. Weber, City Engineer.
Ohio.....	Dayton.....	July 28, noon.....	Bldg. sewers in 4 districts.....	J. C. Ely, Director Pub. Service.
Minnesota.....	Minneapolis.....	July 29.....	Furn. 20,000,000-gal. cent., also vert. trip. expans. pump. engine.....	H. N. Knott, City Clerk.
Montana.....	Ft. Missoula.....	July 30, 9 a.m.....	Bldg. sewer system at fort.....	A. B. Shattuck, Constr. Q. M.
Illinois.....	East St. Louis.....	July 30, noon.....	Bldg. 318 ft. 24-in., 2,274 ft. 15-in., 2,500 ft. 12-in. sewer pipe; 10 c.-i. manhole covers, 7 inlets, paving, curb, etc.....	F. B. Hanna, Clk. Bd. Loc. Imp.
Ohio.....	Galion.....	Aug. 1, noon.....	Bldg. sanitary sewer laterals in all of Dists. 7, 8 and 9 and portions of 1, 2, 3, 5 and 6; 36,812 ft. 4-in., 4,434 ft. 6-in., 43,446 ft. 8-in., 1,472 ft. 10-in., 435 ft. 12-in., 2,412 ft. 15-in. vit. sewer pipe, 42,441 cu. yds. excav., 192 manholes; 1.46 tons specials, small quantity, c.-i. pipe, etc.....	W. H. Weber, City Engineer.
Illinois.....	Danville.....	Aug. 1.....	Bldg. 1,600 ft. 8-in. vit. pipe sewers; 5 manholes, one flush tank.....	J. C. Ely, Director Pub. Service.
Illinois.....	Hooperston.....	Aug. 1.....	Bldg. \$65,000 sanitary sewer system; Fr. Payne, C.E., Danv.	H. C. Findley, Mayor
Georgia.....	Sylvania.....	Aug. 1.....	Constructing sewer system.....	A. B. Lovett, Mayor.
California.....	Colton.....	Aug. 1.....	Bldg. \$60,000 sewer system, flush tanks, manholes, etc.....	W. L. Brown, City Engineer.
Nevada.....	Winnemucca.....	Aug. 2.....	Bldg. sewer system in city.....	C. W. McDied, Clk. Bd. Co. Comrs.
Texas.....	Beaumont.....	Aug. 2, 10 a.m.....	Bldg. sewer extensions: 100 ft. 27-in. pipe, 1,140 ft. 24-in., 1,080 ft. 18-in., 3,445 ft. 15-in. pipe, 1,600 ft. 3.5x3-ft. concrete, 1,500 ft. unknown size brick or concrete; C. L. Scherer, C. E.....	J. G. Sutton, City Secretary.
New York.....	Binghamton.....	Aug. 3, 4 p.m.....	Bldg. sewer in Alice st.....	S. W. Murray, Clk. Bd. Cont. & Sup.
Ohio.....	Cleveland Hgts.....	Aug. 9, noon.....	Bldg. sewers, water mains, etc.; F. A. Pease Eng. Co., Cleveland	H. H. Canfield, Village Clerk.
West Virginia.....	Huntington.....	Aug. 11, noon.....	Bldg. sewers in 2 streets and 3 avenues; brick paving.....	A. B. Maupin, City Engineer.
Florida.....	St. Petersburg.....	Aug. 11, 7 p.m.....	Furn. and lay or lay only 1,800 ft. 16-in. c.-i. flange outlet sewer pipe in Tampa Bay; M. W. Spencer, City Engineer.....	W. F. Divine, City Clerk.
Iowa.....	Battle Creek.....	Aug. 15.....	Bldg. \$7,000 sewer system, of 6, 8 and 12-in. vit. pipe.....	E. E. Carlson, Engineer.
<b>WATER SUPPLY</b>				
California.....	Los Angeles.....	July 22.....	Furn. 58-in. balanced valves for 2 irrigation projects.....	U. S. Reclamation Service, Citizens Bank Building.
New York.....	Plattsburgh.....	July 22, 7 p.m.....	Bldg. dam on West Brook.....	A. G. Senegal, Mayor.
Indiana.....	South Bend.....	July 22, 10 a.m.....	Bldg. water mains, portions various streets.....	O. C. Bastian, Chm. Bd. Pub. Wks.
Minnesota.....	Chisholm.....	July 22, noon.....	Bldg. 2 rein. concrete settling basins, etc., for improving purification plant; cost, \$8,000; D. W. Mead, C.E., Madison, Wis.	E. I. Casey, Village Clerk.
Minnesota.....	Biwabik.....	July 23.....	Bldg. water and sewer mains, Shaw ave., water main, Chic. ave.	H. J. Millbrook, Village Clerk.
South Dakota.....	Scotland.....	July 23.....	Bldg. water tower and connecting pipe.....	F. Goehring, Mayor.
Illinois.....	Oak Forest.....	July 25, 1:30 p.m.....	Drilling wells and erecting well houses at County Infirmary.....	Wm. McLaren, Supt. Co. Pub. Serv.
Ohio.....	Amherst.....	July 25, 2 p.m.....	Bldg. 13 miles 10 to 4-in. water pipe; Aetna Eng. Co., Chicago.	Jacob Baus, Sec'y Water Co.
Illinois.....	Galesburg.....	July 25, noon.....	Furn. and erect. boilers, grates, superheaters, britchens, chimneys, and pumping machinery; coal house and covering reservoir.....	B. J. Huff, Jr., City Clerk.
Texas.....	Quanah.....	July 26.....	Bldg. rubble masonry dam: 239 cu. yds. rein. concrete, 2,344 cu. yds. loose rock paving, 5,890 cu. yds. earthwork.....	J. B. Robertson, City Secretary.
Wisconsin.....	Wausau.....	July 27.....	Driving 10 deep wells, 2 batteries of 2 boilers each; boiler house and coal storage.....	B. C. Gowen, City Engineer.
New York.....	Perry.....	July 28, 1 p.m.....	Furn. and erect. 2,000,000-gal. cross-compound, crank and fly-wheel Corliss condensing pumping engine.....	O. N. Bolton, Village Clerk.
South Carolina.....	Ft. Moultrie.....	July 29.....	Bldg. 3 rein.-cone reservoirs and water distributing system.....	Constructing Quartermaster.
Minnesota.....	Minneapolis.....	July 29, 7:30 p.m.....	Furnishing 20,000,000-gal. electric-driven pumping engine, also vertical triple-expansion pumping engine.....	Henry N. Knott, City Clerk.
Montana.....	Ft. Missoula.....	July 30.....	Bldg. water distributing and sewer system, rein. concrete pumping station, furn. and install. all boilers, valves, etc.....	A. B. Shattuck, Constr. Q. M.
Kansas.....	Ft. Leavenworth.....	July 30, 11 a.m.....	Bldg. water mains, meters, etc., at fort.....	Capt. Wm. D. Davis, Q. M. Village Clerk.
Illinois.....	Winnetka.....	July 30, 1 p.m.....	Laying 20-in. intake pipe 3,000 ft. into Lake Michigan.....	Lewis R. Barrett, Pres. V. I. Bd.
Illinois.....	East Dundee.....	Aug. 1, 7:30 p.m.....	Furn. and laying 9,650 ft. 6-in., 3,190 ft. 4-in. c.-i. pipe, 30 hydrants, 23 six and 5 four-in. valves, boxes, specials, etc.....	C. A. Davies, Frost Bank Bldg.
Texas.....	San Antonio.....	Aug. 1.....	Boring an artesian well with prospect of others.....	A. B. Lovett, Mayor.
Georgia.....	Sylvania.....	Aug. 1.....	Bldg. water works.....	C. C. Carlisle, City Engineer.
Wyoming.....	Cheyenne.....	Aug. 1.....	Hauling and laying 10 miles pipe line, furn. cement for dams.....	Geo. Quarby, Chm. Selectmen.
Massachusetts.....	Saugus.....	Aug. 1 8 p.m.....	Furn. and laying 12,700 ft. 6, 8 and 10-in. standard c.-i. pipe, gate valves, etc.....	N. Coover, City Clerk.
Kansas.....	Wilson.....	Aug. 2.....	Furn. material and building water works and electric light plant; G. P. Taylor, C. E.....	C. R. Baker, Clk. Dir. Pub. Serv.
Ohio.....	Salem.....	Aug. 2, noon.....	Constructing water basin.....	P. W. Guiney, Constr. Q. M.
Texas.....	Ft. Sam Houston.....	Aug. 4, 11 a.m.....	Bldg. smoke stack 85 ft. high for pumping and ice plant.....	W. T. Murphy, Mayor.
Alabama.....	Gadsden.....	Aug. 4, 7 p.m.....	Water works station, filters, machinery and extensions.....	H. H. Canfield, Village Clerk.
Ohio.....	Cleveland Hgts.....	Aug. 9, noon.....	Laying 10-in. main in Cedar road; F. A. Pease Eng. Co., Cleveld'.	
<b>BRIDGES</b>				
Virginia.....	Hillside.....	July 22.....	Bldg. steel bridge over Chestnut creek, near Galax.....	County Clerk, Carroll Co.
Ohio.....	Barberton.....	July 22, 11 a.m.....	Bldg. bridge over Wolf creek ditch, exten. No. 4th st.....	C. L. Wirth, County Clerk.
Wisconsin.....	Watertown.....	July 23, 2 p.m.....	Bldg. concrete abuts., 26-ft. wood bridge, rustic railing.....	Arnold Krafft, City Engineer.
Colorado.....	Wiggins.....	July 23, noon.....	Bldg. rein.-concrete pile slab bridge over Bijou Creek.....	W. S. Henderson, Chm. Co. Comrs.
Nebraska.....	Omaha.....	July 23, noon.....	Bldg. all bridges ordered by Douglas County for one year.....	D. M. Haverly, County Clerk.
Maine.....	Solon.....	July 23, 2 p.m.....	Sub-structure for bridge over Kennebec River.....	G. D. Perkins, Chm. Bldg. Co.
Colorado.....	Ft. Morgan.....	July 23, noon.....	Bldg. rein.-concrete pile slab bridge over creek near Wiggins.....	W. S. Henderson, Chm. Co. Comrs.
California.....	San Jose.....	July 25, 11 a.m.....	Bldg. rein. concrete bridge over creek; cost, \$6,500.....	G. M. Millan, County Auditor.
Ohio.....	Warren.....	July 25.....	Bldg. 2 bridges.....	Fred T. Stone, County Auditor.
Virginia.....	Leesburg.....	July 25.....	Bldg. rein. concrete or iron bridge across "The Dutchman"; 55-ft. span, 12-ft. roadway, and abutments; also for bldg. bridge over Little River, near Aldie.....	J. J. Crim, Chm. Co. Comrs.
Kansas.....	Minneapolis.....	July 25, noon.....	Bldg. 4 bridges; W. S. Gearhart, Manhattan, Hwy. Engineer.....	County Clerk.
Nebraska.....	Hastings.....	July 26.....	Bldg. wood or steel approach to Cedar ave. bridge.....	F. A. Hoffman, County Auditor.
Rhode Island.....	East Providence.....	July 27, 11 a.m.....	Bldg. rein. concrete bridge, grading, etc., Barrington Parkway.....	C. D. Putnam, Engr. Park Comrs.
Louisiana.....	Alexandria.....	July 28.....	Building creosoted timber frame protection fender on piles.....	Ira W. Sylvester, Consulting Engr.
Texas.....	Dallas.....	Aug. 1.....	Bldg. rein. concrete arch viaduct 4,870 ft. long between abutments, approaches 500 ft. long.....	G. L. Fearn, County Auditor.
Ohio.....	Akron.....	Aug. 1, 11 a.m.....	Repair of Canal and River Bridge at Peninsula.....	Chas. L. Wirth, Clk. Co. Comrs.
Ohio.....	Barberton.....	Aug. 1, noon.....	Bldg. viaduct over Erie tracks; city's share, \$30,224.....	H. W. Alcorn, City Engineer.
North Carolina.....	Laurinburg.....	Aug. 1.....	Bldg. 7 rein. concrete arch bridges, five 30-ft. and two 14-ft. spans; four 16-ft. and three 12-ft. roadways.....	M. L. John, Twp. Rd. Comr.
Ohio.....	Jefferson.....	Aug. 1, 1 p.m.....	Bldg. west abut. of bridge over Grand river at Cold Springs.....	A. V. Hillyer, Clk. Co. Comrs.
Indiana.....	Bluffton.....	Aug. 1, 2 p.m.....	Bldg. double 40-ft. span rein. concrete arch.....	O. D. Garrett, County Auditor.
Indiana.....	Danville.....	Aug. 2, 10 a.m.....	Bldg. bridges, arches and walls.....	Wm. H. Nichols, County Auditor.
Indiana.....	Brazil.....	Aug. 2, 11:30 a.m.....	Bldg. steel bridge with concrete abutments.....	J. L. Burnes, County Auditor.
New Jersey.....	Bridgeton.....	Aug. 2, 2 p.m.....	Bldg. arch bridge, Burnt Mill Stream; 10 ft. addition to bridge at Black Water Stream; box culvert 2.5x30 ft.....	Walter M. Sharp, County Engineer.
Ohio.....	Sylvania.....	Aug. 2.....	Bldg. sub. and super., bidder's plans, Division st. bridge.....	Chas. J. Sanzenbacher, County Aud.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>BRIDGES (Continued)</b>				
New York	Oswego	Aug. 2	Bldg. joint city and county bridge over river at Bridge st.	John Smith, Comm. Pub. Wks.
Indiana	Muncie	Aug. 3	Bldg. 3 rein. concrete arches; H. V. Moore, County Engineer	J. E. Davis, County Auditor.
New York	Champlain	Aug. 3, 2 p.m.	Bldg. abutments, Coopersville Hwy. bridge	Wm. Broder, Town Clerk.
Missouri	Carthage	Aug. 3, 1:30 p.m.	Bldg. 6 county bridges	Wm. Kohlman, County Engineer.
Oklahoma	Okemah	Aug. 8	Bldg. 23 steel and wooden bridges	E. Stine, City Clerk.
Ohio	Sandusky	Aug. 10, 10 a.m.	Bldg. Hwy. bascule bridge and approaches; Huron village	John Deist, County Auditor.
Indiana	Anderson	Aug. 16	Bldg. 5 rein. concrete and steel bridges near city	A. Smith, County Engineer.
Iowa	Ft. Dodge	Aug. 22, 7:30 p.m.	Bldg. metal viaduct, 823 ft. long, sub. and super. complete; also remove old and erect new 330 ft. steel superstructure	S. J. Bennett, Mayor.
Montreal	Quebec	Sept. 1, noon	Bldg. Quebec bridge superstructure; \$500,000 check	L. K. Jones, Sec'y Dept. Rys. & Can.
South Carolina	Gaffney	Sept. 5	Rebldg. steel approaches on concrete base, repair bridge, etc.	E. Felix Lipscomb, County Superv.
<b>LIGHTING AND POWER</b>				
Wisconsin	Minocqua	July 25, noon	Bldg. complete electric lighting plant	Wm. Small, Town Clerk.
Illinois	Decatur	July 25, 8 p.m.	Furn. and erect electric generators and excitors, also horiz. condensers, steam engines, 650 B.H.P. dir.-con. to a.-c. generators at municipal light plant	Albert Leach, City Clerk.
Minnesota	Minneapolis	July 29, 7:30 p.m.	Furn. electricity to operate 20,000,000-gal. cent. pump engine	H. N. Knott, City Clerk.
New York	Brooklyn	July 30	Condensers, piping, equip., etc., for power plant; cost, \$46,000	Commandant, Navy Yard.
Georgia	Sylvania	Aug. 1	Bldg. electric light plant	A. B. Lovett, Mayor.
North Carolina	Williamston	Aug. 1	Sale of franchise for lighting town by electricity	B. F. Godwin, Mayor.
Wisconsin	Brownstown	Aug. 1, 1 p.m.	Installing electric lighting plant: 20 h.p. gaso. engine, belt.-con. to 12.5 k.w. generator, pole lines; total, \$2,800	C. E. Stewart, Wis. Bldg., Madison.
Kansas	Wilson	Aug. 2	Bldg. elec. light and water plant; G. P. Taylor, Engr., Stockton	N. Coover, City Clerk.
<b>MISCELLANEOUS</b>				
New Jersey	Peetzburg	July 22, 8 p.m.	Bldg. firehouse; plans at Hotel Woersdoerfer	Chas. G. Zullig, Sec'y Fire Dist.
Wisconsin	Antigo	July 22, 2 p.m.	Repairing and rebuilding County jail	John McGreer, Chm. Co. Comrs.
Wisconsin	Watertown	July 23, 2 p.m.	Laying out park, inc. dredging canal, 4,400 cu. yds., grading, planting trees, etc., foot bridge, walks, etc.	E. J. Brandt, Chm. Park Board.
Oklahoma	Oklahoma City	July 25, 5 p.m.	Bldg. Walnut ave. fire station No. 2	Bob Parman, City Clerk.
New Jersey	Newark	July 26, 3:30 p.m.	Bldg. field house at Riverbank Park, Newark; also closed shelter and refectory at Eagle Rock Reserv., Montclair	A. Church, Sec'y Essex Co. Pk. Comr.
Massachusetts	Taunton	July 28, 4:30 p.m.	Furnishings for Central Police Station	E. A. Tetlow, City Clerk.
Indiana	Muncie	July 28, 1:30 p.m.	Bldg. park shelter house	Board of Park Trustees.
Louisiana	Alexandria	July 28	Building creosoted timber frame protection work and bridge fender on pile foundation	I. W. Sylvester, Consult. Engr.
Mississippi	Natchez	Aug. 3	Sprinkling streets	W. G. Benbrook, Mayor.
New Jersey	Westfield	Aug. 18	Erecting fire house; cost, \$20,000 complete; old bids too high	Town Council.

## STREET IMPROVEMENTS

Birmingham, Ala.—Totten & Ohl, Engineers in charge of 2-mile speedway, cost about \$100,000, will soon ask bids for construction.

Huntsville, Ala.—Council has adopted ordinance providing for \$40,000 bond issue for paving Church St.; also ordinance providing for sidewalks on Meridian and Race Sts.

Mobile, Ala.—Board of Public Works has directed City Engineer to prepare plans and specifications for paving portion of Water st. with cement; cost \$29,195.

Huntington Beach, Cal.—Council has decided to construct cement sidewalks on Olive and 9th sts. and Walnut ave.

Oakland, Cal.—Park Commission, Henry F. Vogt, Secretary, will advertise for construction of asphalt roadways and sidewalks in Lakeside Park; cost \$25,000; plans will be prepared for sidewalk along Lake Shore blvd. and around three sides of East Shore Park; cost \$10,000.

Ocean Park, Cal.—Board of City Trustees have decided to grade and pave Indiana ave., also to grade Vista and Park places and to construct 8-ft. cement walk.

San Diego, Cal.—Paving of Second st. is being considered.

Naugatuck, Conn.—Borough will construct about 2,000 lin. ft. of brick road 50 ft. wide.—William J. Neary, Warden.

Willimantic, Conn.—City has appropriated \$2,000 to extend block pavement.

Orlando, Fla.—Orange County Commissioners have called election Oct. 15 on bonds for building brick roads 9 ft. wide, on main highways.

Tampa, Fla.—Hillsboro County Commissioners will hard-surface road for distance of three miles; Tampa Bay Land Co. will hard-surface road through its property to Alana River.

Tampa, Fla.—Mayor McKay has recommended extension of paving into newly annexed districts.

Sparta, Ga.—City is considering election on \$60,000 bond issue for roads and public utilities.

Twin Falls, Ida.—Council has passed an ordinance creating paving district; cost \$224,167.

Chicago, Ill.—Boulevard starting at Michigan ave. and 16th st. and costing \$750,000 will be started as soon as adjustment of special assessments can be accomplished.

Decatur, Ill.—Board of Local Improvements has offered an ordinance for paving of the north end of Warren and Broadway and Olive st.; estimated cost \$15,718.

Decatur, Ill.—Bids will be received about Aug. 15 for brick paving, on 4-in. concrete foundation, in Eldorado st. and Oakland ave.; cost \$27,000.—A. B. Alexander, City Engineer.

Pekin, Ill.—Council has passed ordinance for paving South Second st. at cost of \$32,782.

Springfield, Ill.—Board of Public Works has decided to pave East Edwards st. with either brick or mineral asphalt.

Fort Wayne, Ind.—Board of Works has confirmed resolutions for paving eight streets; plans have been ordered for paving Harrison st.

Silver Grove, Ind.—Board of Trustees has decided upon improvement of Indiana ave. with granitoid walks, curbing and brick gutters.

Vernon, Ind.—No bids were received July 5 for the construction of 25.6 miles of road in Campbell township.—T. L. Thomas, Jennings County Auditor.

Warsaw, Ind.—Plans are being prepared for 3½ miles of streets.

Winamac, Ind.—No bids were received July 5 for construction of two county roads.—Ellis S. Rees, Pulaski County Auditor.

Fort Scott, Kan.—County Commissioners will soon advertise for bids for improvement of Horton st.; improvement of Mc-Clevery road is being considered.

Leavenworth, Kan.—Paving of Santa Fe st. and Columbia ave. is being considered.

Lexington, Ky.—Council has ordered reconstruction of South Broadway.

Newport, Ky.—Campbell County Fiscal Court is discussing proposition to make a boulevard out of the water works road which leads from Newport to Fort Thomas.

Alexandria, La.—City Board of Aldermen is considering paving of Jackson ave. with asphalt and paving sidewalks on several streets in West End.

New Orleans, La.—Council has passed ordinances providing for paving of portions of Prytanian st. and Kennedy pl.

Waterville, Me.—Street Department will soon build section of state road on Oakland st.; \$1,750 available.

Annapolis, Md.—State Road Commission has adopted tentative route for proposed boulevard between Annapolis and Baltimore.

Ann Arbor, Mich.—City is considering laying of 30,000 sq. yds. concrete pavement with tar and sand top.—E. W. Groves, city, Engineer.

Calumet, Mich.—Plans and specifications for roadway to be constructed by Calumet township in Trap Rock river district have been prepared by Engineer E. S. Grilerson.

Grand Ledge, Mich.—City will pave streets with concrete instead of brick.

Neoguana, Mich.—Iron st. is to be paved with creosoted blocks.—E. C. Anthony, Chairman Board of Public Works.

Akeley, Minn.—Town Board has authorized the construction of cement and plank sidewalks.

Eveleth, Minn.—Bids have been ordered advertised for construction of cement walks on number of streets.

St. Paul, Minn.—Board of Public Works has decided to expend \$20,000 on paving of Dale st.

Brandon, Miss.—Rankin County Commissioners have authorized \$30,000 bond issue for road construction.

Gulfport, Miss.—Harrison County Commissioners have authorized \$50,000 bond issue for road construction.

Chillicothe, Mo.—Council has ordered construction of 1½ ml. of granitoid sidewalks.

Libby, Mont.—City proposes to construct 4½ miles of cement sidewalks at cost of \$39,000.—Paul D. Pratt, Engineer; Montgomery G. Rice, Town Clerk.

Hastings, Neb.—Council has rejected all bids for paving in District No. 10.

Wymore, Neb.—Bids have been asked for several miles of cement walks.

Beverly, N. J.—The Council has under preparation ordinance providing for curbing and guttering of every street in city.

Jersey City, N. J.—Street and Water Board has adopted specifications for improvement of Winfield Ave.; also for improvement of Randolph ave.

Maywood, N. J.—Council has authorized purchase of 2,500 gallons of oil for use on roads.

Medford, N. J.—Concrete sidewalks are to be laid for distance of 1½ miles.

Princeton, N. J.—Council adopted resolution for macadamizing, guttering and paving Murray Place.

Woodbury, N. J.—Council has decided to pave Salem ave.

Herkimer, N. Y.—Board of Trustees has approved plans and specifications for King st. pavement submitted by Engineer Weller.

Rochester, N. Y.—Board of Contract and Supply has decided to pave Stillson st. with asphalt.

Schenectady, N. Y.—Governor Hughes has signed bill providing for construction of a road from Ballston Lake connecting with State road from Saratoga to lake and to Schenectady.

Trenton, N. J.—Council has decided to pave West End ave. with macadam and asphalt binder; also establish grade of sidewalks on portion of Greenwood ave.—H. B. Salter, City Clerk.

Hightland Mills, N. Y.—Town Board has decided to purchase 5,000 gals. of asphaltum with which to oil town roads.

Kinderhook, N. Y.—Bids have been asked for construction of cement sidewalks and crosswalks, \$10,000 available.—Wm. A. Roraback, Village Clerk.

Troy, N. Y.—Cost of widening Oakland ave. has been estimated at \$18,000.

Southport, N. C.—Lockwoods Folly Township will vote Aug. 13 on \$10,000 bonds for road construction; Smithville Township, of Brunswick County, has voted bond issue for road improvements.

Bellaire, O.—Council has decided to improve 32d and South Belmont sts.

Canton, O.—County Commissioners have passed resolution for paving one mile of highway.

Cincinnati, O.—Park Board will ask Council to spend about \$4,500 for brick and concrete wall around driveway along reservoir.

Cleveland, O.—City proposes to pave Mayfield road, S. E., with common Medina stone at cost of \$24,569.

Seville, O.—Bids will be received July 23 for \$28,000 paving bonds, Guilford Township.—L. W. Strong, Clerk.

**Wilmington, O.**—Bids will be received July 22 for \$19,000 paving bonds.—Frank Babb, Village Clerk.

**Ardmore, Okla.**—Council has decided to pave portion of McElroy ave. and three other streets.—Jas. A. Cotner, Mayor.

**Bartlesville, Okla.**—Macadamizing of portion of Dewey-Bartlesville road is being considered.

**Baker City, Ore.**—Council has ordered plans and estimates for paving Bridge st.; cost of paving 2d st. has been estimated at \$61,000.

**Emporium, Pa.**—Paving of Broad st. is being considered.

**Harrisville, Pa.**—State Highway Department will readvertise for bids for paving of Main st. to connect up State highways in this section.

**Hickory, Pa.**—Road Supervisors of Mt. Pleasant Township have decided to build 3,600 ft. of brick road in township this summer, each supervisor to have supervision of 1,200 ft. and to build it where he thinks best.

**Scranton, Pa.**—Council has passed ordinance for paving Wyoming ave.

**Steeltown, Pa.**—Paving of 2d st. is being urged; purchase of road roller will be recommended by Road Roller Committee of Council.—E. C. Henderson, Chairman.

**East Providence, R. I.**—Bids will be received July 27, 11 a. m., for construction of parkway in Barrington; about 100,000 cu. yds. of grading, 6,000 lin. ft. of drains of various sizes, catch basins and inlets, 29,000 sq. yds. of roadway surfacing, 12,000 sq. yds. of walks surfacing, 12,000 cu. yds. of loam surfacing, 12,000 lin. ft. of cobble stone gutters, building reinforced concrete bridge of 30-ft. span and 60-ft. width, and several small items.—Charlton D. Putnam, Engineer.

**Woonsocket, R. I.**—Council has voted to ask Board of Aldermen to lay out one new street and received applications from citizens for laying out of two other highways.

**Erwin, Tenn.**—Citizens have voted \$20,000 bonds for street improvements and sewer construction.

**Newport, Tenn.**—City will construct two miles of concrete sidewalk to connect with Main and Church sts.

**Groesbeck, Tex.**—New precinct will be formed and another election held on bonds for road improvements; proposed issue of \$60,000 defeated.

**Midlothian, Tex.**—Midlothian Precinct of Ellis County has voted \$80,000 bonds for road construction.

**Munday, Tex.**—Citizens have voted \$5,000 street improvement bonds.

**Seguin, Tex.**—Citizens have voted \$25,000 bonds for street improvements.

**Taylor, Tex.**—City Hall sq. will be made into public park with walks, band stand, flower beds, fountain, etc.—Frank Mathews, City Engineer.

**Taylor, Tex.**—City will pave business portion of Taylor st. with Thurber brick on concrete base of Colorado sand and gravel; cement curbs and sidewalks.—Frank Mathews, City Engineer.

**Taylor, Tex.**—Williamson County will construct rock gravel or macadam roads in Road District No. 4.—S. G. Yakey, Commissioner.

**Victoria, Tex.**—Council has instructed Public Service Committee to advertise for bids for laying cement walks in and around the square; estimated cost \$3,000.

**Phœbus, Va.**—Town Council has decided to cover County st. with stone; cost about \$1,066.

**Roanoke, Va.**—Wise County has decided to petition Judge of Circuit Court asking that an election be ordered so people might vote on bond issue of \$700,000 to construct 100 miles of public highway in county.

**Suffolk, Va.**—Lakeside Park Corporation, Henry Wood Campbell, President, will construct granolithic sidewalks through property along Lake Kilby.

**Bellingham, Wash.**—City has rejected all bids for street improvements; Thorwig & Miley, Everett, lowest bidders.

**Spokane, Wash.**—City has decided to pave Astor st. with Hassam.

**Tacoma, Wash.**—Council has adopted ordinance ordering plans for improvement of South 50th st. and improvement of two other streets.

**Morgantown, W. Va.**—Plans are being prepared by Robt. D. Hennen, Road Engineer, for 3,000 lin. ft. of brick pavement, 26 ft. wide, with necessary sewers and concrete curb and sidewalks; contract will soon be let by Monongalia County Commissioners.

#### CONTRACTS AWARDED

**Whipple Barracks, Ariz.**—Roads, catch basins, drains and bridge, to Henry Rockmark, Prescott, \$8,915; to John Shea Co., Prescott, concrete walks, curbing and gutters, etc., \$8,915.

**Hot Springs, Ark.**—Paving portion of Benton st. with concrete blocks, to Zincoll Pole Co., Texarkana.

**Los Angeles, Cal.**—Road improvements, Wilmington, Redondo rd., to I. D. Donegan, 666 Rampart st., city, \$37,700, and 30,000 ft. of Whittier-Downey highway, to H. H. Rogers, \$33,755.

**Redding, Cal.**—Completing west side road from Kennett to Antler, 12 miles, to Chris Stabler, city, division 2, \$10,929.40; Matt Wengler, city, division 3, \$11,250; division 1 is under construction by L. Baer, of Kennett, successor on contract of J. W. Conant, \$7,800.

**San Bernardino, Cal.**—Macadamizing "E" and Allen sts., to Ernest Frenzel, Redlands, \$13,743.

**Plainville, Conn.**—Macadamizing Farmington ave., to O. T. Benedict, Pittsfield, Mass., 7,298 ft., \$1.89 per lin. ft.; rest of distance, \$1.59 per lin. ft.

**Wilmington, Del.**—Bitulithic paving, 30,000 sq. yds., to Warren Bros. Co., of Boston, Mass.

**Belleville, Ill.**—Building 20,000 sq. ft. of granitoid sidewalks, to Adam Neff, 12½c. per sq. ft.

**Canton, Ill.**—Building hard roads to M. Heckard & Sons, city District No. 5, \$32,825.08; to Roler & Savill, city District No. 6, \$34,805.77; total amount of two bids is \$67,630.85.

**Chicago, Ill.**—Furnishing and delivering 300,000 paving bricks, bids opened June 30, to McLaughlin Building Material Co., 145 Lasalle st., \$1 per sq. yd.

**East St. Louis, Ill.**—Improvement of Parsons ave. to Walter Conanan, \$5,891, estimated cost \$6,370.50; Converse ave. to same, \$22,326.40, estimated cost \$24,573.

**Peoria, Ill.**—Paving Park ave., to Jansen & Zoeller, Pekin, \$42,324; 3d st. and 3d pl., to Illinois Cement Construction Co., \$4,587.50.

**Waukegan, Ill.**—Street paving, to James Cape & Sons Co., Racine, Wis., totaling \$56,617, and to McCugo, Bullock & Co., city, \$57,231.

**Beech Grove, Ind.**—Construction of a macadam roadway on Alton st. and constructing cement gutters and sidewalks, to Hoosier Construction Co., \$20,600.

**Decatur, Ind.**—Construction of the J. W. Vizard road, to Albert Mauller, Pleasant Mills, \$2,903.

**Frankfort, Ind.**—Paving Jackson st. with Postons Knobstone block on 2-in. sand cushion, to Frankfort Construction Co., city, 94c. per sq. yd. for paving, 25c. per lin. ft. for curb, and 60c. per lin. ft. for sidewalks.

**Goshen, Ind.**—Placing of new top on 5th st., Westrumite pavement, to W. W. Hatch & Sons Co., about \$10,000.

**Indianapolis, Ind.**—Street improvements, to Marion Caldwell, Box 256, city, grading and paving sidewalks on College ave., \$947; to John Arnold, 1656 Ludlow ave., sidewalks on Gray st., \$1,600; to William H. Holl, cement sidewalks on Daly st., 15c. per sq. ft.; to Marion Caldwell, improvement of Meridian st., \$2,123; to N. H. Holl of 1222 Windsor st., grading and paving sidewalks on Gale st., about \$3,200.

**Lebanon, Ind.**—Construction of the Smith gravel road, to James M. Little, Indianapolis, \$5,231.

**Marion, Ind.**—Construction of C. C. Curry gravel road, to Hardin & Co., \$5,997.

**Muncie, Ind.**—Highway in Center Township, to Geo. Saunders, city, \$25,300.

**Paoli, Ind.**—Construction of gravel road, to O. P. Turley, Orleans, \$4,490.

**Richmond, Ind.**—Gravel road, to John F. Cronin & Co., city, \$52,000 for the road proper and approximately \$2,500 for dressing of asphaltic cement to be used on section of road within city.

**Rushville, Ind.**—Paving with brick of three streets, to Adams Bros., Zanesville, O.

**Salem, Ind.**—Construction of roads, bids opened July 5, to Jacob R. Chastain, Campbellsburg, \$5,899. Vernon Township; to Hiatt & McMahan, Plainfield, Ind., \$6,073, Washington Township; to Hiatt & McMahan, \$7,137, Pierce Township.

**Vincennes, Ind.**—Improvement of Eberwine ave., to P. W. Lenahan, excavation 10c. per sq. yd., embankment 10c., furnishing gravel, 70c. per yd., building concrete sidewalks, 8c. per sq. ft. or 40c. per lin. ft. and placing stone curbing, 38c. per lin. ft.

**Burlington, Ia.**—Paving 17th st., to St. James Tile Mfg. Co., St. James, Minn., about \$50,000.

**Boston, Mass.**—Paving Longwood and Brookline aves., to Field, Barker & Underwood, \$15,687; also Heath st., Roxbury, \$35,538.

**Detroit, Mich.**—Concrete pavement, 8,465 lin. ft., to Owosso Construction Co., Owosso, \$16,422; to R. D. Baker & Co., 1,630 lin. ft. of macadam road, \$1.27 per sq. yd.

**Detroit, Mich.**—Paving, Shepherd ave., brick, to T. E. Currie, \$1,263; alley 185, to James Hanley, \$986; alley 186, to James Hanley, \$1,374; alley 187, to T. E. Currie, \$2,014; alley 188, to R. T. Baker Co., \$1,673; alley 189, to R. T. Baker Co., \$3,606; Butternut st., cedar, to Ferdinand Porath &

Sons, \$5,916; Hudson ave., cedar, to J. Porath, \$2,339; Waterloo st., cedar, to H. W. W. Hatch & Sons, \$2,073; McGraw ave., concrete, to Porath, \$6,048; 23d st., concrete, to Porath, \$6,750.

**Detroit, Mich.**—Paving, to T. E. Currie, Penobscot Bldg., Larned st., with creosoted blocks, about \$3,559; Napoleon st., with brick, \$6,574; Waterloo st., \$1,335, and 2nd st., \$8,333, both with brick; to W. W. Hatch & Son, Penobscot Bldg., Mack ave., with brick, \$6,639; to James Hanley, Penobscot Bldg., Maple st., with brick, cost \$3,330; to J. Porath, with concrete, McGraw ave., and 23d st., and cedar, Hudson ave., \$15,136; to Ferdinand Porath, with cedar, Butternut st., \$5,916.

**Lansing, Mich.**—Paving Turner st., J. A. Algate, low bidder, \$7,889.

**Albert Lea, Minn.**—Paving several alleys with brick, bids opened June 24, to Fielding & Shepley, St. Paul, \$9,033.

**St. Peter, Minn.**—Improving State road, Lake Prairie Township, to John Keogh, \$1,135; road in Traverse, to Chas. Anderson, \$950.

**Tupelo, Miss.**—Constructing 20 miles of road, bids opened July 6, to Good Roads Construction Co., 44 Byrd Bldg., Memphis, Tenn., \$92,785.

**Big Timber, Mont.**—Constructing about 30,000 ft. cement sidewalk, bids opened July 4, to the Two Miracle Co., 20c. per sq. ft.; total cost about \$7,000.

**Great Falls, Mont.**—Ten blocks of creosoted wood paving in the downtown district to Kettle River Company Minneapolis, \$69,989.76; other bidders were the Two Miracles companies, Minneapolis, \$72,736.39, and Bachelor & Powell, Billings, \$72,284.12.

**Lincoln, Neb.**—Repaving portion of 9th st. with Buffalo block, Abel & Roberts, \$1.46 per sq. yd., and M. Ford, \$1.48 per sq. yd.

**Concord, N. H.**—Building gravel road in Northumberland, to Stewart & Snodgrass, Berlin.

**Bayonne, N. J.**—Improving three streets with asphalt, to Uvalde Asphalt Co.; 15th st., \$4,350.50; 40th st., \$9,717.05; Ave. B, \$52,367; Prospect ave. with bitulithic, to Standard Bitulithic Co.

**Jersey City, N. J.**—Improving Van Nostrand ave., to O'Reilly Bros.; Skillman ave., to Henry Byrne.

**New Brunswick, N. J.**—Repair with second-hand Belgian blocks on Pearce, Water and Washington sts., to Farley Bros.

**Buffalo, N. Y.**—Repair contract, 18 months, to Barber Asphalt Co.

**Cohoes, N. Y.**—Cleaning and oiling macadam road from Gibson to Chemung county line, to Thomas F. Deegan.

**Rochester, N. Y.**—Brick pavement, Spruce st., to Whitmore, Rauber & Vicinus, \$14,975, and Ericsson st., \$2,940.75; Earl st., to H. N. Cowles, \$12,569; Rockwood st., to Louis D. Argento, \$4,890.

**Elizabeth City, N. C.**—Paving streets with brick, to Bowe & Page Co.; Main st., with asphalt, to Barber Asphalt Co.

**Cincinnati, O.**—Filling 9th st., to Ed. J. McKenna, 23c. per cu. yd.; macadamizing Bassett road, to John Ruebel Construction Co., \$9,871; also Virginia ave., \$9,478.

**Columbus, O.**—Brick paved roads, to D. E. Sullivan, Columbus, \$11,724; to Acme Paving and Construction Co., cement walks, curbing and gutters, \$4,379.

**Mansfield, O.**—Constructing the Plymouth and Shiloh State aid road, to Carroll & Gruber, Caledonia, \$18,167.

**Prospect, O.**—Furnishing brick for paving streets, to the South Zanesville Sewer Pipe and Brick Co.

**Bartlesville, Okla.**—Paving 12th st., to P. S. Kaull Co., Kansas City, \$2.38 per sq. yd.; guttering, 55c.

**Enid, Okla.**—Grading Illinois ave., to W. R. Hardgraves, 22½c. per cu. yd.

**Portland, Ore.**—Paving portion of Lombard st., to Hassam Paving Co., \$127,545.

**Allentown, Pa.**—Building 25,000 yds. asphalt pavements, to Barber Asphalt Co.

**Wilkes-Barre, Pa.**—Improvement of 3,400 ft. of Northampton st., Wilkes-Barre Township, to W. T. Huchins & Co., Wyoming; Glutin binder will be used.

**Knoxville, Tenn.**—Pike repairs: to Horace A. Mann, Tazewell pike, Emory road and Clinton pike; to Peters & Gibson, Middlebrook pike; to McCammon & Johnson, Berlin Heights pike; to Jas. U. Burkhardt & Co., Sharp's Gap pike and a road from Greenway to Fountain City.

**Memphis, Tenn.**—Street improvements, to Memphis Asphalt and Paving Co., resurfacing about 23,000 sq. yds. of brick pavements, cost \$34,000; Barber Asphalt Paving Co., Philadelphia, Pa., \$1.17 per sq. yd. to pave one block of Rayburn blvd.; to H. W. Brennan, two short pieces of gravel work on Lamar blvd., and to M. Larkin for two short strips of brick paving on East Floyd and McCall st.

**Dallas, Tex.**—Grading, graveling, clearing, grubbing, excavating, filling earth embankments and reprofiling in Humbard Trail road, to Vilbig Bros., \$5,004.67.

**Bellingham, Wash.**—Improvement of Magnolia st., to Thorsvig & Miley, Everett, \$26,500.

**Everett, Wash.**—Improving Nob Hill district, to F. K. Ffolliott, \$36,958.11.

**Spokane, Wash.**—Paving Cannon Hill to J. F. Hill Co., Chicago, \$438,171.

**Spokane, Wash.**—Street improvements, grading and sidewalk, Alice and Liberty aves., to Naylor & Norlin, \$4,934, two months; Main ave., to Mitchell Bros., \$10,597, 90 days; 24th ave., to Mitchell Bros., \$6,410, 90 days; 34th ave., to Naylor & Norlin, \$9,983, two months; grading, curving and paving Arthur st. and Newark ave., to Spokane Asphalt Macadam Paving Co., \$14,750, three months, maintenance for five years, \$1,000; paving, grading, curb and sidewalk, Howard st., to Barber Asphalt Paving Co., \$62,000, 90 days, maintenance for five years \$1,365; grading and sidewalk, Addison st., to C. M. Payne, \$23,850, 60 days; Augusta ave., to Massie Bros. & Long, \$2,534, 60 days; grading alley between 2d and 3d aves., to Thomas Malony, \$400; alley between 3d and 4th aves., to J. B. Mitchell, \$329, 30 days; laying sewer on 14th ave., to J. L. Wood, \$3,160, 60 days; grading and sidewalk, 5th ave., to Abbott & Joslin, \$5,129, 60 days; Heroy ave., to Naylor & Norlin, \$7,484, two months; Lindeke st., to Naylor & Norlin, \$4,134, one month; Marietta ave., to Massie Bros. & Long, \$1,729, 30 days; Monroe st., to Massie Bros. & Long, \$14,489, 90 days; Providence st., to Naylor & Norlin, \$3,934, two months; Sheridan st., to Colley & Ferguson, \$4,600, 90 days.

**Tacoma, Wash.**—Paving as follows: No. 432, for the paving of Commerce st. with stone blocks, to Keasel & McDowell Logging Co., \$15,970; to Joseph Warter & Co., District No. 438, \$8,843.

**Tacoma, Wash.**—Grading District No. 762, to Wright & Sweeney, \$1,798; improving sidewalk district, including 24th st., to Erickson & Anderson, \$3,731.

**Walla Walla, Wash.**—Improvements on North Rose st. to Pacific Paving Co., \$4,529.60.

**Superior, Wis.**—Paving Banks ave., to Peterson & Hohn, \$10,797; to Lund & Co., constructing cement sidewalks.

**Sheridan, Wyo.**—Paving in District No. 1, bids opened June 27, to Jas. Kennedy, Farago, at the following bid: 23,000 cu. yds. excavation, 50c.; 69,064 sq. yds. 3-in. creosoted wood block pavement, \$2.45; 11,511 cu. yds. concrete foundation, \$4.10, and 2,400 lin. ft. concrete header blocks, 30c., and for storm sewer, \$11,116.

**Foam Lake, Sask., Can.**—Building concrete walks, to Royal Artificial Paving Co., 16c. per sq. ft.

#### BIDS RECEIVED

**Los Angeles, Cal.**—Construction of two sections of the Long Beach boulevard, one short section between the city limits of Long Beach and Willows, and the other between Compton and Watts: F. F. Pendergast, \$2,910 for grading and culverts on the first section, and \$3,875 on other; laying the macadam, \$1.25 per ton on one section and \$1.36 on other; contract does not include rock and oil.

**Hartford, Conn.**—Construction of state road work, town of Avon, 7,700 lin. ft. macadam-telford or graded road, including one reinforced concrete arch culvert and five 24-in., 4 18-in. and one 15-in. tile culverts, (a) macadam, (b) grading, (c) telford, (d) rubble drain, (e) cobble gutters: A. Brazos & Sons, Middletown, Conn., (a) \$43,250, (b) \$38,300, (c) 40c., (d) \$1.20, (e) 75c.; O. T. Benedict, Pittsfield, Mass., (a) \$57,000, (b) \$49,000, (c) 60c., (d) 80c., (e) \$1; B. D. Pierce, Jr., Co., Bridgeport, Conn., (a) \$45,090, (b) \$55,850, (c) 65c., (d) \$1; (e) 60c.; P. Suzio Co., Hartford, Conn., (a) \$30,000, (b) \$28,875, (c) \$2.40, (d) \$1.65, (e) 60c. Town of West Hartford, 9,885 lin. ft. macadam-telford or graded road, including one 20-in., five 18-in., two 15-in. and three 12-in. tile culverts, (a) macadam, (b) graded, (c) telford, (d) rubble drain, (e) cobble gutters: A. Brazos & Sons, Middletown, Conn., (a) \$84,000, (c) 40c., (d) \$1.25, (e) 75c.; O. T. Benedict, Pittsfield, Mass., (a) \$75,000, (b) \$63,000, (c) 80c., (d) 70c., (e) \$1; B. D. Pierce, Jr., Co., Bridgeport, Conn., (a) \$75,762, (b) \$63,900, (c) 65c., (d) \$1, (e) 60c.; Peter Suzio & Co., Hartford, Conn., (a) \$38,551, (b) \$38,057.51, (c) \$1.25, (d) \$2.40, (e) 60c.; A. C. Sternberg & Sons, West Hartford, Conn., (a) \$57,000, (b) \$55,000, (c) 75c., (d) \$1.25, (e) 75c.; F. Arrigoni & Bro., Durham, Conn., for to sections of road, aggregating 17,585 lin. ft., for following prices: (a) \$119,000, (b) \$99,000, (c) 60c., (d) 75c., (e) 75c. Town of Warren, 1,900 lin. ft. graded road, including two 15-in. and one 24-in. tile culverts: Goodman & Trumbull, Litchfield, Conn., \$2,622 for grading, with 90c. per lin. ft. extra for telford, and 90c. for rubble drain; B. D. Pierce, Jr., Co., Bridgeport, Conn., \$5,400, 65c. and 65c. Town of Bolton, 3,640 lin. ft. grading, in-

cluding one 12-in. tile culvert: Goodman & Trumbull, Litchfield, Conn., \$4,280 for grading and 90c. per lin. ft. extra for telford, 90c. for rubble drain and 60c. per sq. yd. for cobble gutters: O. T. Benedict, Pittsfield, Mass., \$5,550, 70c., 70c., 80c. Town or Plainville, 7,298 lin. ft. macadam-telford road, including one 15-in. tile culvert: O. T. Benedict, Pittsfield, Mass., \$1.19 per lin. ft. for macadam, \$1.90 for telford, 75c. per lin. ft. for rubble drain; Merritt & Bush, Stamford, Conn., \$1.40, \$2, \$1; A. C. Sternberg & Sons, West Hartford, Conn., \$1.33, \$2, \$1; Roger Kennedy, Middletown, Conn., \$1.69, \$2.50, \$1; B. D. Pierce, Jr., Co., Bridgeport, Conn., \$1.47, \$2.20, 65c. Town of Farmington, 9,104 lin. ft. macadam-telford, including one 12-in., two 15-in. and two 18-in. tile culverts and a reinforced concrete arch culvert: A. Brazos & Sons, Middletown, Conn., \$1.91 for macadam, \$2.31 for telford, 80c. for rubble drain; O. T. Benedict, Pittsfield, Mass., \$1.59, \$2.19 and 75c.; A. C. Sternberg & Sons, West Hartford, Conn., \$1.60, \$2.20 and \$1; B. D. Pierce, Jr., Co., Bridgeport, \$1.64, \$2.34 and 65c. Town of Winchester, 10,750 lin. ft. of macadam-telford road, including ten 15-in., five 18-in., five 20-in., and three 24-in. tile culverts, (a) all trap rock macadam, (b) native stone macadam, (c) telford, (d) rubble drain, (e) masonry walls: Goodman & Trumbull, Litchfield, Conn., (a) \$4.27 per lin. ft., (b) \$4.20, (c) 70c., (d) 90c., (e) \$6; A. Brazos & Sons, Middletown, Conn., (a) \$4.30, (b) \$3.90, (c) 60c., (d) \$1.25, (e) \$5; Merritt & Bush, Stamford, Conn., (a) \$4.10, (b) \$3.40, (c) 40c., (d) \$1, (e) \$6; John De Michiel & Bro., Torrington, Conn., (a) \$3.98, (b) \$3.36, (c) 25c., (d) \$1, (e) \$5. Town of Mansfield, first section, 1,600 lin. ft. gravel on the Willimantic-Stafford road: H. L. M. Ladd, New London, Conn., \$2,900 and 60c. per lin. ft. extra for telford; O. T. Benedict, Pittsfield, Mass., \$3,040 and 60c. extra for telford. Same, second section, 2,500 lin. ft. graded road, including two 20-in. tile culverts on the Spring Hill-Storrs turnpike: A. Brazos & Sons, Middletown, Conn., \$4.20 per lin. ft. for grading, 40c. for telford, 80c. for rubble drain; Clayton F. Curtiss, Glensbury, Conn., \$2.75, 75c. and 75c.; O. T. Benedict, Pittsfield, Mass., \$3.99, 60s., 75c.; A. C. Sternberg & Sons, West Hartford, Conn., \$3.28, \$4, \$1; Ahern Bros., Norwich, Conn., \$3.38, \$4.25, \$1.15. Same, third section, 13,041 lin. ft. grading on the Storrs College Road, including four 18-in., two 15-in. and one 12-in. tile culverts: A. Brazos & Sons, Middletown, Conn., \$54,369.90 for grading, with 50c. per lin. ft. extra for telford and 80s. for rubble drain; O. T. Benedict, Pittsfield, Mass., \$38,000, 80c., \$1; A. Vito & Co., Thompson, Conn., \$31,603.20, 80c., \$1.

**Aurora, Ill.**—Paving with asphalt portions of four streets, to McCarthy Improvement Co., Davenport, Ia., and Standard Asphalt Paving Co., Chicago, \$1.64 per sq. yd.

**Peoria, Ill.**—Paving Park ave., Federal Improvement Co., Chicago, 22,000 sq. yds. of mineral rubber asphalt pavement at \$1.67 1/2; 20,000 ft. curbing, 5 1/2 x 20, at 29c.; 600 ft. protection curb at 20c.; total \$42,770; Illinois Cement Construction Co., Springfield, 22,000 sq. yds. mineral rubber asphaltic pavement at \$1.70; 20,000 ft. curbing at 26c.; 600 ft. protection curb at 26c.; total \$42,756; Jansen & Zoeller, Pekin, awarded contract, 22,000 sq. yds. mineral rubber asphaltic pavement, \$1.69; 20,000 ft. curbing at 25c.; 600 ft. protection curb at 24c.; total \$42,324. On the 3d st. improvement the bids were as follows: Illinois Cement Construction Co., awarded contract, 2,500 sq. yds. Alton brick, at \$1.69; 1,500 ft. curb reset at 10c.; 400 ft. new curb at 25c.; 100 ft. protection curb at 25c.; total \$4,500; Jansen & Zoeller, 2,500 sq. yds. Alton brick, \$1.69 1/2; 1,500 ft. curb reset, 15c.; 499 ft. new curb, 25c.; 100 ft. curb reset, 25c.; total \$4,587.50.

**Bloomington, Ind.**—Totals of bids opened June 30 for 27,957 sq. yds. brick pavement on 6-in. concrete foundation, Jas. N. Blair, Bloomington, \$78,292; Foulkes Construction Co., Terre Haute, \$63,175; Daniels-List Co., Anderson, Ind., \$69,180; Geo. T. Miller, Lebanon, \$62,596; Ewing Shields, Seymour, \$68,595; Harding & Slatlatty, Crawfordsville, \$65,334; Jos. H. Campbell, Bloomington, \$80,163; The Hoosier Construction Co. of Indianapolis, bid for asphalt paving, \$66,672, and bitulithic, \$61,646—Ulysses S. Hanna, City Engineer.

**Evansville, Ind.**—Building Louisiana st. sewer, John Newman, only bidder, \$5,200.

**Ft. Wayne, Ind.**—Macadamizing Wildwood Ave., John F. Brooks Paving Co., lowest bidder, \$4.15 per lin. ft.

**Marion, Ind.**—Improvement of West 2d st., Michaels & Minich, a total of \$5,507.70, or \$5.97 per lin. ft.; Dillard Artis, a total of \$5,581.54, or \$6.05; F. M. Benner, \$6.12 per ft. with asphalt filler, or \$6.04 per ft. with tar filler.

**Richmond, Ind.**—Improvement of Na-

tional road, J. F. Cronin & Co., city, \$52,000 and \$1 per lin. ft. extra for tarvia or surface binding; Daniels-List Co., Anderson, \$52,566 and \$1 per lin. ft. for tarvia and \$100 for old bridges; Philip Hipskind & Sons, Wabash, \$52,200, and 21c. per sq. yd. for tarvia or saxite asphaltic cement.

**Butte, Mont.**—Sidewalks in Improvements Districts, Nos. 85, 95 and 91 on the west side: J. H. Turner, \$1.74 per sq. yd. for plain concrete, \$4.49 for reinforced concrete, \$7.99 for plain curbing, and \$14.99 for reinforced curbing per lin. yd.; bid of H. Sawyer was 1c. more on every item.

**Norfolk, Neb.**—Paving in District No. 1, (a) Katz-Craig Contracting Co., Omaha, (b) M. Ford, Omaha: 23,286 sq. yds. vit. Purington block paving, 18 Ratter test, 5-in. gravel concrete base, bituminous filler, (a) \$2.29, (b) \$2.35; 1,939 lin. ft. 7 x 20-in. art. stone curb, (a) 42c., (b) 49c.; 666 lin. ft. 3 x 12 oak headers, (a) 25c., (b) 9c.; 1,000 lb. c-i. gutter plates, (a) 3 1/2c., (b) 4c.; 2,030 lb. c-i. grates and inlets, (a) 4c., (b) 4c.; 24 vert. ft. brick catch basins, (a) \$3, (b) \$3.75; 80 lin. ft. 15-in. inlet pipe, D. S. vit., (a) 75c., (b) 84c.; 315 lin. ft. 24-in. storm sewer, D. S. vit., (a) \$1.50, (b) \$1.67.

**Elizabeth, N. J.**—Repaving Madison ave. with brick, J. J. Potts, \$10,339.12; O'Neill & Viscount, \$11,512.84; Samuel Donovan, \$11,427.40; Patrick Faughnan, \$10,797.28.

**Newark, N. J.**—Paving Pleasant Valley Way, Verona to West Orange: Monroe Paving Co., Philadelphia, Pa., \$34,700.32; Philip Pifer Jannerone, Newark, N. J., \$35,282.80; James J. Frusco, Newark, N. J., \$42,530; Francisco Biso, Great Notch, N. J.; Osborne & Marcellus, Upper Montclair, N. J., \$47,478.80; Robert Drietz, Newark, N. J., \$36,780.65; Geo. M. French, Somerville, N. J., \$49,654.80; J. F. Shandy Co., Newark, N. J., \$47,359.20—A. B. Pierce, Clerk, Committee Roads & Assessments.

**New York, N. Y.**—Street improvements as follows: Paving with asphalt Vise ave., lowest bidder, Hastings Pavement Co., 5,670 sq. yds. of completed asphalt block pavement and keeping the same in repair for five years, \$1.67; 913 cu. yds. of concrete, including mortar bed, \$5.76; 800 lin. ft. of new curb, furnished and set in concrete, \$1, and 2,650 lin. ft. of old curb, rejointed, recut on top and reset in concrete, 33c.; total \$16,402; regulating, laying crosswalk, etc., in Hyatt ave., lowest bidder, Stalwart Construction Co.; 250 cu. yds. excavation, 50c.; 10,500 cu. yds. filling, 70c.; 1,210 lin. ft. new curbing, 70c.; 4,700 sq. ft. new flagging, 22c.; 650 sq. ft. new bridgestone, 50c.; 1,020 cu. yds. dry rubble masonry in retaining walls, culverts and gutters, \$2; 1,500 lin. ft. of new guard rail, 10c.; paving with granite, Tremont ave., lowest bidder, Asphalt Construction Co., 2,570 sq. yds. new granite block pavement on concrete foundation, laid with paving cement joints and keeping the same in repair for one year, \$2.94; 382 cu. yds. concrete, \$4; 230 lin. ft. new curbstone, 73c.; 765 lin. ft. old curb reset, 29c.; 100 sq. ft. new bridgestone for crosswalks, 55c.; 770 sq. ft. of old bridgestone, relaid, 15c.; total \$9,644; lowest bidders for regulating, grading, setting curb, etc., on Leggett ave., T. F. Gaffney, \$9,501; Lyon ave., L. J. Moran, \$9,278; Whitlock ave., L. J. Moran, \$7,147.

**Norwalk, O.**—Paving portions of Monroe, Milan sts., Case, Whittlesey aves., and constructing a stone road on Townsend ave., Geo. B. Herring & Sons, Mansfield, \$18,167; Buckeye Engineering Co., city, \$22,203; W. S. Pace, Cleveland, \$18,798; Jos. L. Smith, Lorain, \$19,875; Jas. Quinn, city, \$23,182.

**Portsmouth, O.**—Paving Hutchins ave., J. A. Grimes, \$14,623; Kelley Bros., city, \$12,694; S. Monroe & Son, city, \$13,608; Kaps Bros., city, \$12,725.

**Racine, Wis.**—Paving Lake ave.: Federal Improvement Co., Milwaukee, low on brick paving, \$2.05 per sq. yd. and 53c. for curbing; E. R. Harding, \$2.06 and 62c.; White Construction Co., low on asphalt, \$1.93 and 60c. for curbing; Western Improvement Co. was low on creosoted block, \$2.45 and 60c.; Federal Improvement Co. also low on mineral rubber paving, \$1.85 and 53c.

#### SEWERAGE

**Alameda, Cal.**—Bids will be received about the latter part of July for construction of south side sewer, to be of pipe; cost about \$20,000.—Frank Browning, City Clerk.

**Colton, Cal.**—Trustees of this city will soon advertise for bids for construction of municipal sewer system; \$63,000 bonds have been voted.—W. L. Brown, City Engineer.

**Los Gatos, Cal.**—Board of Town Trustees has made preparations to submit bond issue to purchase 23 acres embraced in the Kelley tract for a sewer farm.—George W. Turner, Mayor.

**Oakland, Cal.**—Park Commission has ordered advertisement for bids for installing drainage system in Lakeside Park.—H. F. Vogt, Secretary.

**Oroville, Cal.**—City Trustees will sell \$120,000 sewer bonds July 29.

**Oroville, Cal.**—City will let contract within three weeks for building complete sewer system; cost \$120,000.—C. E. Kusel, Mayor.

**Roseville, Cal.**—Citizens have voted \$78,500 bonds for pipe sewers.—U. S. Marshall, Engineer; J. H. Sherman, City Clerk.

**Tulare, Cal.**—Bids will be received July 25 for purchase of \$68,000 sewer bonds.—Haviland & Tibbets, Oakland, Engineers; E. Oxford, City Clerk.

**Willimantic, Conn.**—Aldermen have appropriated \$3,500 for construction of sewer in Main st.

**Tampa, Fla.**—Mayor McKay has recommended extension of sewerage into newly annexed districts.

**Camilla, Ga.**—Terra cotta pipe sewer construction, \$15,000, is being considered.—T. H. Martin, 920 Empire Bldg., Atlanta, Engineer.

**Pocatello, Id.**—Citizens have voted \$164,788 bonds for sewers.—W. A. Samms, City Engineer.

**Twin Falls, Id.**—Bids will be asked about September for constructing pipe sewers; cost about \$36,000.—Stuart H. Taylor, City Clerk.

**East Moline, Ill.**—Council has instructed City Engineer H. G. Paddock to prepare estimates on cost of extending sewer service into new territory between 10th and 13th sts.

**Peru, Ill.**—Construction of sewer in vicinity of Buffalo and St. Marks sts. is being considered by Council.

**Indianapolis, Ind.**—Board of Works has decided to rescind contract let last January to John E. Sullivan for construction of local sewer in Parkway, from 18th st. to 30th st., and new bids will be advertised for.

**Muscatine, Ia.**—Council has instructed City Engineer to prepare plat and schedule showing proposed sewerage improvement in district to be known as Sub-sewer District No. 20 in Main Sewerage District No. 1.

**Burlington, Kan.**—City proposes to expend \$35,000 for sewers.—Burns & McDonnell, Kansas City, Mo., Engineers; D. Hall, City Clerk.

**Elkton, Md.**—Citizens have defeated proposal to issue \$75,000 bonds to complete sewer system and to establish light and water plants.

**Malden, Mass.**—Street and Water Commission has voted to ask for bids for sewers in Linden.

**Saginaw, Mich.**—Cost of installing sewer in Mackinaw st. has been estimated at \$25,025.

**Crookston, Minn.**—City Engineer has presented plans and estimated cost of relief sewer in Fletcher st. at \$1,386.

**Ellisville, Miss.**—City will engage engineer to estimate cost of constructing sewer system.

**Crete, Neb.**—Bids will be received July 25, 8 p. m., for \$40,000 sewer bonds.—A. Dredla, Mayor.

**Laconia, N. H.**—City Council has authorized a \$20,000 bond issue for the extension of the sanitary sewer system; work will commence at once; construction will be done by Sewer Department.—Chas. A. French, City Engineer.

**East Orange, N. J.**—Plan to satisfactorily solve problem of sewage disposal for East Orange and save one-half cost of joining in Passaic Valley trunk scheme, has been recommended to Council by Edward S. Pierson, Chairman of Council's Special Committee on Sewage Disposal; it provides for the city's own outlet to tidewater with sedimentation and filtration plant; plant has been worked out by Harrison P. Eddy, Boston.

**Woodbury, N. J.**—Council has asked for bids for sewer Bell tract.

**Binghamton, N. Y.**—Plans are being prepared for immediate installation of sewage disposal plant.

**Glen Cove, L. I., N. Y.**—Plans have been prepared by Geo. W. Fuller, 170 Broadway, New York City, for Village Improvement Society plans for sewer system; estimated cost \$60,000.

**Yukon, Okla.**—Citizens have voted \$10,000 bonds for construction of sewer system.

**Independence, Ore.**—Bids will be received July 20 for \$17,000 sewer bonds.—W. S. Kurre, City Recorder.

**Lehighton, Pa.**—Sewer plans have been approved by State Commissioner of Health.

**Hazleton, Pa.**—State Board of Health has approved plans for construction of proposed sewers on two streets and reconstruction of Diamond ave. sewer; bids will be asked at once by City Engineer Youngman.

**Mechanicsburg, Pa.**—Sewering of Washington st. cost \$1,000, is being considered.

**Quakertown, Pa.**—City is considering establishment of sewerage system to cover entire borough and surroundings.

**Williamsport, Pa.**—City Engineer Otto has about completed report giving estimated cost of construction of storm water sewer down bed of Graffius Run.

**Woonsocket, R. I.**—Sewer Commissioners, Frank E. Holden, Chairman, have asked for \$3,000 appropriation for top dressing filter beds and renewing three of the distributing troughs.

**Bridgewater, S. D.**—Construction of complete sewer system, to Wm. Welsh.

**Sioux Falls, S. D.**—Stone and pipe sewers for the west side sewerage system are to be constructed at cost of \$160,000.—S. B. Howe, Engineer; Lewis Lorson, City Auditor.

**Erwin, Tenn.**—Citizens have voted \$20,000 bonds for sewer construction and street improvements.

**Hoquiam, Wash.**—Plans have been prepared for sewerage city at cost of \$200,000.

**Kennewick, Wash.**—City will spend \$50,000 this year in construction of sewers.—L. E. Johnson, Mayor.

**Baraboo, Wis.**—Council has adopted an ordinance providing for preparation of plans and specifications for Birch st. sewer.

**Janesville, Wis.**—Council has decided to construct sewers on four streets.

**Port Gray, B. C., Can.**—Ratepayers will vote on \$250,000 loan for sewers.

#### CONTRACTS AWARDED

**Alameda, Cal.**—Construction of a sewer on San Antonio ave., to C. F. Fisher; 6-in. pipe, 46c. per ft.; Y's, 55c.; manholes, \$35.

**San Francisco, Cal.**—Constructing Powell-Bay-Market sts. section of auxiliary sewer system, to Keystone Construction Co., \$130,260.41; to Metropolis Construction Co., sewer on 4th and Kentucky sts., \$23,182.

**Pueblo, Col.**—Sewers, District No. 11, to W. J. Ripley; District No. 2, to Jas. Cahill.

**Charles City, Ia.**—Constructing sewer, bids opened June 13, to C. D. De La Hunt, Cedar Rapids, \$29,840.

**Waverly, Ia.**—Constructing sewers requiring 3,522 ft. 12, 10 and 8-in. vit pipe, bids opened July 5, to Swanson Bros., city, \$2,170.

**Burlington, Kan.**—Construction of sewer, including mains, submains, laterals, septic tank and pump house, to Tonkana Construction Co., Tonkana, Okla., \$33,112.

**Sabetha, Kan.**—Constructing sanitary sewers, P. A. Johnson & Co., 427 N. 10th st., Kansas City, Kan., \$19,206.38; two sewage disposal plants, Lewis & Kitchen, Kansas City, Mo., \$12,500; the detailed bids will be given next week in these columns.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.

**Boston, Mass.**—Extension of the sewer system at Fort Warren, Boston Harbor, to McManus Contracting Co., Philadelphia, Pa., \$1,628.

**Boston, Mass.**—Constructing sewers, to E. F. Kennedy, Journal Bldg., \$3,700.

**Winona, Minn.**—Storm sewers, to John Regan, total \$1,555.—Paul A. Jasmer, City Recorder.

**St. Louis, Mo.**—Constructing first section of Glaise Creek joint district sewer, to Geo. G. Prendergast Construction Co., city, at the following bid: 76,100 cu. yds. excavation, 93c.; 7,000 cu. yds. Class A concrete, \$7.80; 500 cu. yds. Class C concrete, \$7.15; 990 cu. yds. brick masonry, \$9; 970 cu. yds. vit. brick masonry, \$9; 430 lin. ft. 6-in. to 3-ft. pipe sewer, 40c. to \$4; 76,800 lin. ft. ½-sq. in. steel bars, 1½c.; 178,700 lin. ft. ½-sq. in. steel bars, 2c.; 93,300 lin. ft. ½-sq. in. steel bars, 3¼c.; 45,000 lin. ft. ¾-sq. in. steel bars, 4½c.; 53,800 lin. ft. ¾-sq. in. steel bars, 6c.; 17,700 lin. ft. 1-sq. in. steel bars, 8c.; 164 pieces 6-in. junction stants, \$1; 5,400 lbs. cast-iron, 3c.; 1,250 lbs. wrought iron, 5c.; total, \$161,616.

**Roselle, N. J.**—Sewer on 7th ave. to Wade Bros., \$1,082.

**Rochester, N. Y.**—Laying sewer in Northern Terrace, to John Petrosi, \$2,885.75; Norton st., to H. N. Cowles, \$2,013.50.

**Rome, N. Y.**—Sewage disposal plant, to Angelo Colongelo, city, \$9,800; other bidders, Carey Construction Co., city, \$12,800; New York Sewage Disposal Co., New York City, \$12,301; Antonio Rienzo, city, \$12,673.—Chas. Bernstein, Superintendent Rome State Custodial Asylum.

**Findlay, O.**—Constructing five miles of stone pipe in Delaware Township, bids opened July 8, to Hancock Stone Co., city, \$16,890.

**Hamilton, O.**—Sanitary sewer on North 6th st., to Garver Contracting and Transfer Co., \$1,711.50.

**Jefferson, O.**—Building sewer system, to Geo. Waller & Co., Ensign Bldg., Erie Pa., \$36,000.

**Toledo, O.**—Building sewer in Lee st., Ironville, to John McMahon, \$5,414.

**Beaver, Pa.**—Sewering Groveland st., to R. D. Hunter & Co., about 2,300 ft., 80c. for 8-in., 87c. for 10-in., \$50 for manholes, \$45 for flush tank and \$12 for lamp poles.

**Olyphant, Pa.**—Building outlet sewer, to Pittston Construction Co., \$2,553; to Flanagan & Co., at \$4,650, for construction of Valley ave. sewer.

**Huron, S. D.**—Lateral sewers, to Brookings Construction Co., \$7,697.50.

**Ritzville, Wash.**—Construction of extension to F st. sewer, to J. J. Royce, \$2,490.

**Collingwood, Ont., Can.**—Sewers, to Wm. Simpson, as follows: Second st., 15-in., \$1,150; 5th st., 8-in., \$450.

#### BIDS RECEIVED

**Attleboro, Mass.**—Seven contracts for construction of trunk sewer and filtration areas, bids and awards of contract follow: Contract A, filtration field to R. H. Newell, Uxbridge, \$36,793; C. E. Trumball Co., Boston, \$41,864; Rome Contract Co., Boston, \$42,560; Thomas Fitzgibbon, Beverly, \$43,160; Bruno & Petitti, Boston, \$44,263; Tyrell & Gill Co., Winter Hill, \$49,750; James H. Fannon, Somerville, \$52,741; A. J. Tomassello, Dorchester, \$53,266; Michael Kane, Worcester, \$65,502. Contract B, first section, concrete sewer from fields to Tiffany, 30-in. pipe concrete: Bruno & Petitti, Boston, \$58,876; A. G. Tomassello, Dorchester, \$63,932; George Phillips, Boston, \$67,165; John J. Falvey, Somerville, \$98,562, contract not awarded. Contract C, concrete and iron pipe, 30-in., extending from Tiffany to Thacher st.: Bruno & Petitti, Boston, \$33,189; A. G. Tomassello, Dorchester, \$47,373; John J. Falvey, Somerville, \$52,492, contract not awarded. Contract D, vitrified pipe, for filter fields, from 3 to 24-in.: Brownell Hardware Co., Attleboro, \$4,295, awarded contract; Eastern Clay Goods Co., Boston, \$4,295; Berry & Ferguson, Boston, \$4,662; David W. Lewis, Boston, \$4,555; American Pipe Co., Boston, \$4,691; Thomas Robinson Co., Philadelphia, \$5,357; Waldo Brothers, Boston, \$5,361. Contract E, iron pipe, from 6 to 30-in. with special castings, to be used in contracts A, B and C: Charles Miller & Sons Co., Utica, \$10,714, awarded contract; R. D. Wood & Co., Philadelphia, \$11,106; Fred A. Houdelette, Boston, \$11,149; Fred A. Houdelette, Boston, \$11,180; Warren Foundry & Machine Co., New York, \$11,322; M. J. Drummond Co., New York, \$11,528; U. S. Cast Iron Pipe & Foundry Co., New York, \$12,530. Contract F, manhole covers and collars: Concord Foundry Co., Concord, \$590, awarded contract; Milford Iron Foundry, Milford, \$637; Sessions Iron Foundry, Bristol, Conn., \$650; Sessions Iron Foundry Co., Bristol, Conn., \$723; Builders' Iron Foundry, Providence, \$774; Paul Hannigan, Lawrence, \$850; Springfield Foundry, \$870; White, Warner Co., Taunton, \$872. Contract G, water and sewer gates and boxes: Ludlow Valve Co., Troy, \$4,093, awarded contract; Coffin Valve Co., Neponset, \$4,654; Chapman Valve Co., Indian Orchard, \$4,678; H. H. Davis, Boston, \$6,018.—J. Van Valkenburgh, Engineer.

**Crookston, Minn.**—Laying sewers, P. McDonnell, Duluth, lowest bidder: Contract No. 1, 760 ft. 12-in. and 694 ft. 9-in. v.c. pipe, \$1.30 and \$1.10; contract No. 2, 570 ft. 24-in. and 63 ft. 30-in. v.c. pipe, \$2.90 and \$3.60; contract No. 3, 460 ft. 9-in. v.c. pipe, \$1; totals of other bidders: G. W. Haggart, Fargo, N. D., \$2,497; No. 2, \$1,950; No. 3, \$555; Bosworth Bros., Ada, Minn., \$2,604, \$1,945.45, and \$569; Warren Machine & Iron Works Co., Warren, Minn., \$2,637, \$2,002.50 and \$586.—J. E. Carroll, City Engineer.

**Elizabeth, N. J.**—Sewer in Amity st., between 2d and 3d aves., Wade Bros., \$602.90; Lewis Rusciano, \$1,125.75; Louis Jacques, \$498.23.

**Brooklyn, N. Y.**—Furnishing all labor and materials required for the construction of a sewer in Blake ave. and outlet sewers in Grafton st., between Blake ave. and E. 98th st., and in Barrett st., between Blake ave. and E. 98th st.; estimated cost, \$23,045, percentage basis: Murphy Bros., 101.6-10 per cent.; Leo Kelly, 108½ per cent.; P. Pauze and M. J. Burke, 109 per cent.; Newman & Carey, 97 14-100 per cent.; A. E. Nicholas, 90 7-8 per cent.; Vachits & Celardi, 96 per cent.

**New York, N. Y.**—Sewer work, (a) constructing sewer and appurtenances in Cypress ave., from Myrtle ave. to Cooper st., Second Ward; (b) 14th ave., from Van Deventer ave. to Flushing ave., and in Wilson ave., from 15th ave. to 13th ave., First Ward: (a) Ryan & Reilly, \$67,194; H. J. Mullen, \$72,081; Hicks Johnson, \$63,243; Peace Bros., \$63,490; Haggerty & Drummond, \$83,183; John Williams, \$84,202; Newman & Carey, \$68,498; Thomas J. Carlin, \$63,765; (b) P. P. Farley, \$14,959; Green Construction Co., \$13,750; H. T. Mullen, \$12,574; Peace Bros., \$13,684. Sewer and appurtenances in Northern ave., between 18th st. and 19th st.: Joseph Burns, \$54,651; Frances M. Palladina, \$48,902; Walter J. Ford, \$50,908; Jos. More, \$55,167; O'Leary & Flannigan, 245 E. 202d st., New York, \$41,248; Terry & Tench, \$48,376.

## WATER SUPPLY

**Leslie, Ark.**—Leslie Light, Water and Power Co. will expend \$20,000 on water works and electric light plant construction; brick and concrete.

**Paragould, Ark.**—Improvement District No. 2 will spend \$15,000 constructing water works system, including 300,000-gal. reservoir and water main.

**Altadena, Cal.**—Rubio Canyon Land and Water Co. will build reservoir on mouth of canyon; cost about \$15,000.

**San Francisco, Cal.**—Board of Public Works has been advised that from \$35,000 to \$50,000 will be needed to complete investigations into water sources, made necessary by suggestions of Army Board of Engineers appointed by the President.

**Suisun, Cal.**—Board of City Trustees has ordered 4,000 ft. of 2½-in. pipe for fire mains throughout city; entire system will be put in repair.

**Suisun, Cal.**—Town Trustees have decided to improve municipal water system by laying 3,400 ft. of pipe of larger dimensions than that now in use on a portion of line.

**East Hartford, Conn.**—Engineer C. Henry Olmsted, East Hartford fire district, is consulting with Engineer A. Edward Olmsted in regard to proposed pipe line throughout Hillstown to Burnside; cost \$60,000.

**Tampa, Fla.**—Mayor McKay has recommended bond issue for municipal ownership of water works.

**Gainesville, Ga.**—City will install auxiliary pumping station consisting of 1,200-gal. centrifugal pump and 100-h.p. motor.—C. A. Colclough, Chairman Water Committee.

**Montezuma, Ga.**—Citizens have voted \$5,000 bonds for construction of water tower and other improvements to water works.

**Decatur, Ill.**—City will purchase 22,855 ft. 6, 8, 10 and 12-in. mains.

**Joliet, Ill.**—City Engineer Stevens has reported that only real solution of west side shortage is to drill well and establish station on river bank north of Western ave.; cost \$25,000.

**Rockford, Ill.**—Citizens will vote on \$200,000 bonds for improvement of water works system.

**Clinton, Ia.**—Additional and purer water supply is being considered. Address Dr. Hohenschuh, City Health Physician.

**Leon, Ia.**—Cost of proposed water works has been estimated at about \$35,000.—Iowa Engineering Co., Clinton, Engineers.

**Sioux City, Ia.**—Establishment of 15-in. well with modern turbine pumping engine somewhere on east side to be used as auxiliary of the main pumping plant of water works has been decided upon by Councilman G. B. Healy, Superintendent of Parks and Public Property, after conference with F. W. Cappelen, of Minneapolis, Consulting Engineer for Water Works.

**Tabor, Ia.**—Citizens have voted \$5,000 water bonds.

**Coffeyville, Kan.**—Citizens will vote Aug. 2 on \$75,000 bonds to improve water system.

**Kansas City, Kan.**—Plans are being prepared by Engineer W. Kiersted, Water Works Bldg., Kansas City, Mo., for concrete filtration basin of 5,000,000 to 6,000,000 gals. capacity, at Quindaro.—J. S. Barker, Secretary of Water Works.

**Moundridge, Kan.**—City will at once sink two additional wells.

**Pittsburg, Kan.**—Citizens have voted \$300,000 bonds to build municipal water plant.

**Wellington, Kan.**—Citizens have voted \$30,000 bonds for water works improvements.

**Henderson, Ky.**—Water Board is planning construction of reservoir containing 6,000,000 gals. of water; estimated cost, \$30,000; also considering construction of filtering plant.

**Baton Rouge, La.**—Mayor Roux, City Engineer Swart and representatives of the water works company are working on plans for extension of water works mains.

**Lake Arthur, La.**—J. B. Streeter, Chief of Fire Department, desires prices on steel towers, cypress tanks, cast-iron water mains and fittings, hydrants, and portable hand fire engines.

**Pollock, La.**—Town Council has decided to construct water works system.

**Baltimore, Md.**—Board of Awards has decided to reject bid of B. F. Bennett Building Co. for the pipe line pumping station.

**Williamsport, Md.**—Installation of water works is being considered. Address Mayor Bryon.

**Holyoke, Mass.**—Survey in connection with one site for the proposed storage reservoir at Fomer has been presented to Water Commissioners by City Engineer James L. Tighe.

**Lynn, Mass.**—City is to have water filtration plant which will cost between \$300,000 and \$400,000; Hering & Fuller, 170 Broadway, New York, N. Y., will design plant.

**Dillon, Mont.**—Council is considering laying additional pipe line between this city and reservoir.

**Eureka, Mont.**—Bond issue for installation of water works system is proposed.

**Alliance, Neb.**—Plans are being prepared by Grant & Letton, F. & M. Bldg., Lincoln, for extensions to water works and electric light plant; cost about \$95,000.

**Beatrice, Neb.**—Plans have been completed by Engineers W. K. Palmer Co., Dwight Bldg., Kansas City, Mo., for improvements to water works system; cost \$70,000.—S. Q. Free, City Clerk.

**Cranford, N. J.**—Citizens have empowered Township Committee to proceed with proposition of municipal ownership of water plant.—E. W. Hale is interested.

**Perth Amboy, N. J.**—Bids will be asked for erection of new stack at water plant at Runyan.

**Niagara Falls, N. Y.**—Board of Water Commissioners has decided to issue \$400,000 water bonds to complete new municipal water system.

**Euclid, O.**—Bids will be received Aug. 8 for \$16,000 water bonds.—Nelson J. Brewer, Village Clerk.

**Miford, O.**—Bids will be received July 30 for \$4,000 water bonds.—H. L. Schroeder, Village Clerk.

**Youngstown, O.**—Bonds of \$120,000, to be used for water reservoir at Milton, have been sold to Hayden Miller Co., Cleveland, for \$120,000.

**Fairview, Okla.**—City is considering bond issue for extension of water works; cost about \$50,000.—W. H. Wimpey, Mayor.

**Mannsville, Okla.**—Citizens will vote on \$20,000 of bonds for construction of water works.

**Sapulpa, Okla.**—City will construct filtering plant in connection with construction of \$250,000 water system.

**Tishomingo, Okla.**—City desires prices on 20-h.p. gasoline engine, 4 and 6-in. pump and filter plant. C. B. Thomas can be addressed.

**Yukon, Okla.**—Citizens have voted \$30,000 bonds for construction of water works.

**Bandon, Ore.**—Citizens have voted \$60,000 bonds for municipal water plant.

**Salem, Ore.**—Council has passed ordinance amending city charter in such a manner as to enable Council to purchase water plant, now owned by Salem Water Co., and extend water mains throughout city at cost of \$4,000,000.

**Conway, Pa.**—Borough will vote July 30 on \$20,000 bonds to build water plant and system.

**Easley, S. C.**—Public Work Commission, W. W. Haggard, Chairman, is perfecting plans for installation of water works and electric light system.

**Houston, Tex.**—City Engineer Dormant will soon complete plans and specifications for construction of the Cleveland Park reservoir and pumping station.

**Munday, Tex.**—Citizens have voted \$10,000 water bonds.

**Old Point Comfort, Va.**—Government will make various improvements on Fisherman's Island, including construction of water works; plans have been prepared and bids will be asked; estimated cost \$12,000 to \$15,000. Dr. Cumming, of United States Quarantine Station, is interested.

**Clarkston, Wash.**—E. E. Libby, President Improvement Co., has offered to supply city with water to install hydrants for fire purposes.

**Keyser, W. Va.**—Town Council has called election for July 25 on \$30,000 bonds to build subsidiary reservoir of 26,000,000 gals. for town water supply.

**Kendall, Wis.**—Election on \$10,000 bonds for installation of water works system is being considered.

**Mellen, Wis.**—The Mellen Water and Light Co. has petitioned Council for 20-year franchise; \$25,596 will be expended in improvements.

**Rice Lake, Wis.**—Board of Public Works has recommended about 1,600 ft. water main extensions.

**Waterloo, Wis.**—City has selected James H. Thompson, 324 Dearborn st., Chicago, Ill., as engineer to prepare plans and specifications for improvements to water works.

**Port Gray, B. C., Can.**—Citizens will vote on \$500,000 loan for constructing water works system.

**Port Arthur, Ont., Can.**—Citizens have voted \$500,000 bonds for water works.—J. Antonisen, Engineer.

**Raymond, Alta., Can.**—Water works by-law has been ratified by ratepayers.

## CONTRACTS AWARDED

**Fort Smith, Ark.**—Laying water pipe and installing hydrants, to Municipal Engineering and Construction Co.; furnishing pipe, to U. S. Pipe Co., St. Louis, Mo.

**Moline, Ill.**—Equipping fifth filter bed in Moline water works, to New York Continental Jewell Filtration Co., \$2,825.

**South Bend, Ind.**—Water connections on

Diamond ave., to W. H. Burke & Co., plumbers.

**South Bend, Ind.**—Construction of foundation for new Leeper Park pumping station, to George J. Hoffman Construction Co., \$2,440.54.

**Indianola, Ia.**—Extension of water mains to Des Moines Bridge & Iron Works, Des Moines, \$7,000; W. D. Lovel, Minneapolis, Minn., \$8,106.58; M. H. Meredith, West Liberty, Ia., \$7,617; Moy Sing Co., \$9,500; the unit price bid by Bridge Co. for a base of settlement on extras or shortages, 4-in. pipe, 50c.; special, 3½c.; hydrants, \$32; valves, \$15.—A. H. Gilliland, Engineer.

**Grand Rapids, Mich.**—First contract for filtration plant to Joseph P. Rusche; building 36-in. drain and 48-in. clear water conduit \$51,518.44; engineer's estimate, \$53,182.

**Andover, N. H.**—Constructing water works, as follows: Pipe, to U. S. Cast Iron Pipe and Foundry Co., at \$24.70 per ton; hydrants and valves, to Fairbanks Co., \$1,157, and pipe laying, etc., to Ablett & Bowes, Cohoes, N. Y.—Dudley & Sawyer, Manchester Engineers; Prof. John R. Eastman, Chairman Water Committee.

**Lestershire, N. Y.**—Construction of three wells, to W. F. Emerson.

**Fort Worth, Tex.**—Steel water tank and tower to R. D. Cole Manufacturing Co., Newman, Ga., \$7,855.

**Brandon, Man., Can.**—Erection of filter building, pumping station, to Thos. Chamber, \$4,000.

**Exeter, Ont., Can.**—Erection of 40,000-gal. steel tank, 100 ft. elevation, to Good, Shapley & Muir, Brantford, \$3,300; not including foundation.—F. W. Farnecomb, Manager, London.

## BIDS RECEIVED

**Fort Smith, Ark.**—Furnishing water pipe: United States Pipe Co., St. Louis, awarded contract, \$26.65 per ton for all sizes pipe;

\$52 for specials; Sheffield Iron Co., Kansas City, 6-in. pipe, \$27.50; other sizes, \$27; specials, \$55; Dimmick Pipe Co., Kansas City, 6-in. pipe, \$27.05; 8-inch, \$27.25; 12-in., \$26.15; 20-in. and 24-in., \$26.05; specials, \$54; American Cast Iron Co., Kansas City, all sizes, \$26.85; specials, \$55; Rensselaer Mfg. Co., Troy, N. Y., check and gate valves, \$14.50 to \$153; Chapman Valve Co., Springfield, Mass., valves, \$13.75 to \$170; steamer hydrants, \$20.50; other fire hydrants, \$22; hydrant bid was based upon the company getting the contract for all the material bid upon; Western Valve Co., Kansas City, steamer hydrants, \$28.96; other fire hydrants, \$21.75; valves, \$8.75 to \$176; Columbian Iron Works, Chattanooga, Tenn., steamer hydrants, \$23.45; others, \$21.45; check and gate valves, \$9.25 to \$235. Following bid on laying of the pipe: Brooks Construction Co., Jackson, Mich.; Williams & Cooney, Fort Smith; Municipal Engineering & Construction Co., Kansas City, awarded contract; Reese & Peters, San Antonio, Tex., and Mike Wallace & Co.

**Wyandotte, Mich.**—Water works extension, complete work, including intake, 3-million Myer gear-valve pump and building: Keating Bros., Detroit, \$16,389.45; Corliss Valve, 3-million, \$17,789.45; the Board of Public Works has but \$17,000 available, and Keating Bros. proposal is only one inside; cast-iron pipe, specials and flexible joints, (a) 500 ft. 24-in. c.i. pipe, (b) specials, (c) four 24-in. flexible joints: R. D. Wood & Co., (a) \$26, (b) .026c., (c) \$1.85 per 100 lbs.; J. B. Clow & Son, (a) \$25.75, (b) .03c., (c) \$95 each; American Car & Foundry Co., Detroit, (a) \$24.90, (b) .0275c.; Massillon Iron & Steel Co., (a) \$23.75, (b) .025c.; Walker Mfg. Co., (c) \$105 each. For pumping machinery, (a) 3-million Myer gear, (b) 5-million Myer gear, (c) 3-million Corliss, (d) 5-million Corliss; Wisconsin Eng. Co., surface condenser, (d) \$12,750; Allis-Chalmers Co., (c) \$11,367, (d) \$14,085; Laidlaw-Dunn G. Co., (a) \$5,350, (b) \$8,725, (c) \$6,900, (d) \$10,700; Snow Steam Pump Co., (d) \$13,000, jet, (d) \$13,500; Platt Iron Works, surface condenser, (a) \$5,795, (b) \$3,850, (c) \$7,695, (d) \$12,555.

**New York, N. Y.**—Water improvements, (a) furnishing, delivering and laying water mains in 204th st. and (b) in Cherry, Beekman, Dover, Ferry, Frankfort, Front, Fulton, Gold, John, Nassau, Oak, Pearl, Platt, Roosevelt, Rose, South, Spruce, Vandewater and William sts., New Bowery, Burying Slip, James Slip, Peck Slip and Maiden Lane: (a) Joseph Burns, 147 E. 125th st., \$35,589; Thomas Crimmons, \$42,212; Henry W. Fox, \$37,709; O'Leary & Flannigan, \$40,347; Louis D. Gregory, \$37,806; Haggerty & Drummond, \$47,474; F. V. Smith Contracting Co., 157 E. 125th st., \$35,139; F. N. Lewis, \$33,731; (b) James H. Holmes, 87 Nassau st., \$262,236; Haggerty & Drummond, \$369,531; James R. Brown, \$391,588.

**Seattle, Wash.**—Lining the Beacon Hill reservoir, Cedar River water system No. 2, to Krebultz, Smith & Rountree, Bailey Bldg.; Concrete 1:9 in. lining, including mortar

surface in place, 19,700 cu. yds., \$9 per cu. yd.; Sylvester, Wash., 90,400 sq. yds., 1.1c.; refilling, 200 cu. yds., \$1.05; excav. in reservoir basin, 6,800 cu. yds., 72c.; concrete fill, 200 cu. yds., \$7.15; dressing outer slopes, 15,000 sq. yds., 22c.; removing wooden bridges, each, \$75; concrete walks, 2,175 sq. yds., \$117.12; steel landings, each, \$55; steel picket fence with con. footings in place, 3,800 ft., \$1.86; earth work in Spokane st., 2,600 cu. yds., \$1.50; lumber in curbs and gutters, 4.5 m. ft., \$35; lumber in box drains, overflow pipe, etc., 6 M. ft., \$35; special castings, 2,500 lbs., 11c.; shackel rods in place, 200 lbs., 8½c.; extra excavation in pipe line trenches only, 40 cu. yds., \$1; concrete for blocking and anchors, 10 cu. yds., \$15; gate house, lump sum, \$12,500; reinforcing material in gate house, 500 lbs., 5c. extra concrete in gate house, 15 cu. yds., \$12; 42-in. steel pipe, 5-16 in. thick, 700 lin. ft., \$12.85; 36-in. steel pipe, 5-16 in. thick, 920 lin. ft., \$10.83; 30-in. steel pipe, 5-16 in. thick, 40 lin. ft., \$10.60; 24-in. steel pipe, 1-4 in. thick, 2,900 lin. ft., \$7.45. Laying pipe: 30-in. c.-l. pipe, 300 lin. ft., \$4.40; 30-in. class A, 830 lin. ft., \$10.70; 24-in. class A, 810 lin. ft., \$8.40; 12-in. class A, 525 lin. ft., \$4.82; 6-in., class A, 300 lin. ft., \$1.55; 4-in., class A, 80 lin. ft., \$1.25; 12-in. kalamazoo pipe, 615 lin. ft., \$2.33; 4-in. kalamazoo pipe, 3,700 lin. ft., 63c.; 2-in. galvanized iron pipe, 3,500 lin. ft., 40c.; 6-in. sewer pipe drain, in reservoir bottom, cemented joints, 1,000 lin. ft., 82c.; 3-in. sewer pipe, single drain reservoir bottom, open joint, 1,600 lin. ft., 54c.; 3-in. sewer pipe, double drain reservoir bottom, open joint, 4,800 ft., 75c.; 4-in. sewer pipe drain in steel pipe trench, open joint, 300 ft., 27c.; 3-in. sewer pipe drain under walk on Spokane st., 200 ft., 15c.; 4-in. sewer pipe drain for brick valve chambers, 80 ft., 30c.; 6 cast-iron valve boxes, each, \$2.50; 1 Venturi meter tubes, in 42-in. steel pipe, \$1,265. Total, \$290,682, including valves, etc.; totals of other bids were: West Coast Constr. Co., Alaska Bldg., \$303,827; John P. Badenhausen, Arcade Annex, \$332,887; Puget Sound Bldg. & Dredging Co., Central Bldg., \$350,245, and International Dredging Co., Central Bldg., \$321,240.

## LIGHTING AND POWER

**Leslie, Ark.**—Leslie Light, Water and Power Co. will expend \$20,000 on electric light plant and water works construction. **Barstow, Cal.**—Barstow Utility Co. has had plans prepared for electric light plant.

**Tampa, Fla.**—Mayor McKay has recommended bond issue for municipal ownership of lighting plants.

**Streator, Ill.**—Illinois Valley Gas and Light Co. will soon begin erection of 10,000 h. p. electric plant in this city.

**Crawfordsville, Ind.**—Crawfordsville Water and Gas Co. will ask Council this month for new franchise to sell water and gas in Crawfordsville.

**Gas City, Ind.**—Light and Water Committee is considering application of Marion Light and Heating Co. for franchise to put in lines to furnish power to factories.

**Michigan City, Ind.**—Chicago, Lake Shore & South Bend Electric Railway will expend \$140,000 for additional equipment for its million dollar local plant.

**Oakland City, Ind.**—Michael Murphy & Co. have received franchise from Town Council to pipe town for natural gas.

**Maysville, Ky.**—Citizens will vote on \$75,000 bonds for construction of electric light plant and to secure natural gas.

**Baltimore, Md.**—H. K. McCay, Engineer, has made proposal to city to erect electric plant and deliver current at switchboard at 1½c. kw.-hour.

**Elikton, Md.**—Citizens have defeated proposition to issue \$75,000 bonds to establish light and water plants and complete sewer system.

**Pittsfield, Mass.**—Pittsfield Electric Co. has asked for authority to issue \$225,000 new stock for purpose of paying for improvements and extensions which have been and are to be made in plant.

**Ironwood, Mich.**—Council has awarded to Ashland Power Co. franchise for electric light, heat and power plant and contract for street lighting.

**Austin, Minn.**—Election will soon be held on \$30,000 bonds for electric light, power and water extensions.

**Biwabik, Minn.**—Citizens have voted bonds for construction of an electric light plant.

**Duluth, Minn.**—Cost of "white way" proposed by West End Commercial Club has been estimated at \$85 per standard or \$3,400 for entire four blocks.

**De Soto, Mo.**—Council is considering installation of municipal lighting system in connection with water works.

**Kansas City, Mo.**—Light Committee of Council has adopted recommendations to Council for installation of 30 gas lights and seven electric lights.

**Tipton, Mo.**—Bids will be received July 25 for \$18,000 bonds for constructing electric

lighting system.—J. S. Worley Co., Reliance Bldg., Kansas City, Mo., Engineers.

**Nebraska City, Neb.**—Citizens' Gas Co. has applied to Council for franchise for 20 years, and agree to reduce the price of gas from \$1.65 to \$1.30 per 1,000 cu. ft.

**Island Heights, N. J.**—Ocean County Gas Co. has been granted franchise to lay mains and furnish gas to consumers in this place.

**West Cape May, N. J.**—Council has passed to second reading an ordinance giving Cape May Light and Power Co. five-year contract to light the borough streets with electricity.

**Germantown, N. Y.**—Red Hook Light and Power Co., 17 State st., New York City, is asking for bids for the construction of concrete dam of 1,200 cu. yds.

**Niagara Falls, N. Y.**—Public Service Commission, Second District, is considering a petition from the Niagara, Lockport and Ontario Power Co. asking permission to extend transmission lines through Dunkirk, Westfield and Jamestown and to allow it to furnish these cities with Niagara Falls power.

**Scotia, N. Y.**—Installation of municipal gas and electric plant is being considered; gas plant will cost \$25,000.

**Syracuse, N. Y.**—Syracuse Lighting Co. will apply to the City Council for permission to erect and maintain ornamental poles for cluster lamps on South Warren st.; cost of maintaining lamps to be paid by business men; plans for erecting ornamental lamps on Jefferson st. are also being considered.

**Yonkers, N. Y.**—Committee on Lighting will make trip to inspect various lighting plants and inquire into contracts.

**Raleigh, N. C.**—Substituting system of magnetite lights is being considered by Alderman through proposition from Carolina Light and Power Company which furnishes light, power and street railway service; company proposes to install a \$200,000 magnetite light equipment and have the city increase payment for lighting by \$800.

**Akron, O.**—Council is considering ordinance providing \$27,000 bond issue for municipal lighting plant.

**Berea, O.**—Bids will be received July 25 for \$16,000 electric light improvement bonds.—O. R. Stone, Village Clerk.

**Cuyahoga Falls, O.**—Northern Ohio Tractation and Light Co. will erect \$2,000,000 power station.

**Foraker, Okla.**—City is having plans prepared by F. H. Lancashire, Dallas, Tex., for electric light plant.—W. L. Leaton, Town Clerk.

**Eugene, Ore.**—Seven miles of gas mains will be laid this summer by new owners of the local gas and electric plants. The company will also rebuild the gas manufacturing plant; total of \$250,000 will be expended this year.

**Carbondale, Pa.**—Scranton Electric Co. will erect substation on Pike st.

**Conemaugh, Pa.**—Ordinance presented by Johnstown Fuel Supply Co., a subsidiary of Citizens' Light, Heat and Power Co. in its application for a franchise to furnish railroad suburb with gas for only heating purposes, has been passed upon by Ordinance Committee.

**Reading, Pa.**—The Consumers Gas Co., which purchased property in Reading for \$20,000, will erect a mammoth holder, costing \$250,000, and which will hold 1,500,000 cu. ft. of gas.

**Honesdale, S. C.**—City has selected J. B. McCravy Co., Atlanta, Ga., to make surveys and estimate cost of construction of electric light plant.

**Mission, Tex.**—Minneapolis Steel Co., of Minneapolis, Minn., has submitted proposition to Council to install an electric light and ice plant; cost \$13,000.

**Tacoma, Wash.**—No bids were received July 5, for construction of proposed \$95,000 sub-station of Nisqually power plant.—Nicholas Lawson, Commissioner, Department of Light and Water.

**Port Arthur, Ont., Can.**—Citizens have voted \$10,000 power plant bonds.—J. Antonisen, Engineer.

**Yorkton, Sask., Can.**—Town Council has passed resolution authorizing preparation of by-law to expend \$35,000 on municipal electric light plant.

## CONTRACTS AWARDED

**Los Angeles, Cal.**—Lighting county buildings for year, to Los Angeles Gas & Electric Corporation, 5c. per kw. per hour.

**Washington, D. C.**—Electric light lamps for government throughout the country, to General Electric Co., 30 Church st., New York; Columbia Incandescent Co., and the Novelty Lamp Co.; estimated cost \$170,000.

**Waycross, Ga.**—Lighting city, 5 years, to Ware County Light & Power Co., \$32,500.

**Idaho Falls, Ida.**—Furnishing machinery to consist of two 250-kw. General Electric generators, four 250-Trump turbines, two 700-gal. turbine pumps, with Trump turbines, switchboard, exciter and turbine,

crane, to the Minneapolis Steel and Machinery Co., Minneapolis, Minn., for a total of \$28,288.

**Rockford, Ill.**—Concrete dam to replace old water power dam here, to Newton Engineering Co., Milwaukee, Wis., \$30,000.

**Baltimore, Md.**—Maintaining gas and naphtha lamps in city, to sole bidder, American Street Lighting Co.

**Holyoke, Mass.**—Furnishing two boilers at city gas works, to Holyoke Steam Boiler Works, \$3,700.

**Hoboken, N. J.**—Lighting streets by electricity, to Public Service Corp. over veto of Mayor Geo. Gonzales.

**London, Ont., Can.**—Contract for 76 ornamental and electric light poles, to London Foundry Co., \$29 each; to Northern Electric Co., Toronto, line hardware, amounting to \$1,700.

**Prince Albert, Sask., Can.**—Boilers for the electric light works, to Goldie & McCulloch, Galt, Ont.

## FIRE EQUIPMENT

**Oroville, Cal.**—City will expend \$15,000 in improving fire department, and engine may be purchased.—C. E. Kusel, Mayor.

**Piedmont, Cal.**—Site has been purchased for erection of fire station; apparatus will be installed.

**San Francisco, Cal.**—Finance Committee has recommended \$4,000 appropriation for purchase and installation of 53 fire alarm boxes.

**Augusta, Ga.**—Committee of Council and the Tree and Park Commission has jointly reported favorably proposition that Council erect engine house at Woodlawn and May aves.; cost \$10,000.

**Sullivan, Ind.**—Bids will be received for erection of fire house.

**Lynn, Mass.**—Mayor James E. Rich has signed \$15,800 loan order for purchase of automobile equipment for police and fire departments.

**Springfield, Mass.**—Purchase of site on Carew st. for erection of sub fire station.

**Taunton, Mass.**—Council has appropriated \$4,400 for rebuilding steamer No. 4.

**Grand Rapids, Mich.**—Site at Hall st. and Grandville ave. has been selected for erection of proposed engine house; City will purchase six additional auto fire engines in spring.

**Choteau, Mont.**—Purchase of fire-fighting apparatus is being urged.

**Saybrook-Salem, N. J.**—Company 1 of the Union Volunteer Fire Department has instructed the Apparatus Committee to purchase outfit for hook and ladder truck, which is being built by Charles Elmendorf, Ernest Mink and Henry Karg; truck will be equipped with extension ladders, buckets, axes and hand fire extinguishers; a Building Committee, Thomas Monaghan, Otto Boschen and Ernest Mink, has been appointed to consider the plans for proposed new fire house which will cost from \$4,000 to \$5,000.

**Poughkeepsie, N. Y.**—Plans by A. H. Saenger, Vassar College, have been accepted for erection of chemical engine house on Main st., Arlington.

**Schenectady, N. Y.**—Volunteer Fire Department, Village of Carmen, will purchase two chemical engines, ladders, etc. D. A. Sands is interested.

**Hazleton, Pa.**—Council has authorized purchase of 1,000 ft. of fire hose.

**Kittanning, Pa.**—Business Men's Association is urging Council to organize a paid department and purchase steamer, auto engine and other equipment. James McCullough, Jr., is interested.

**Lemoyne, Pa.**—Fire Department will purchase chemical and hose wagon.

**Morningside, Pa.**—Erection of fire station is being urged.

**Oneida, S. D.**—Purchase of chemical fire engine is being considered.

**San Antonio, Tex.**—City is considering erection of fire house at Hicks and Presa sts.

**Glover, Vt.**—Purchase of fire engine is being urged.

**Tacoma, Wash.**—Erection of fire station near 26th and Proctor sts. is being urged.

**Wheeling, W. Va.**—Fire Chief Altmeyer is urging purchase of number of engines and other apparatus.

**Quebec, Que., Can.**—Emile Tanquay has been appointed architect for fire and police station; site has been purchased.

## CONTRACTS AWARDED

**Portland, Ore.**—Two third-class Metropolitan fire engines and two combination hose and chemical automobile apparatus will be purchased from A. G. Long, of this city.

**San Antonio, Tex.**—Fire alarm system, to Gamewell Fire Alarm Telegraph Co., New York City, \$11,320.

**De Pere, Wis.**—Hose, 300 ft. Red Cross brand, to Eureka Hose Co., \$1 per ft. and 300 ft. to the Bi-Lateral Fire Hose Co., \$5c.